JOINT AGENCY WORKSHOP

OF THE

CALIFORNIA ENERGY COMMISSION

CALIFORNIA PUBLIC UTILITIES COMMISSION

In the Matter of:	)	
	)	
DESIGN OF THE NEW SOLAR HOMES PARTNERSHIP	)	KETCH Docket:
and	)	06-NSHP-1
	)	
ORDER INSTITUTING RULEMAKING REGARDING POLICIES, PROCEDURES and RULES FOR CALIFORNIA SOLAR INITIATIVE, SELF-GENERATION INCENTIVE PROGRAM and OTHER DISTRIBUTED GENERATION ISSUES	)	CPUC Rulemaking: 06-03-004

CALIFORNIA ENERGY COMMISSION

HEARING ROOM A

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

TUESDAY, JUNE 13, 2006

9:35 A.M.

Reported by:
Peter Petty
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CALIFORNIA ENERGY COMMISSION

Jackalyne Pfannenstiel, Chairperson

Staff and Consultants

Tim Tutt, Advisor

Gary Collord

Mary Ellen Shay

CALIFORNIA PUBLIC UTILITIES COMMISSION

Dian Grueneich, Commissioner

Staff

Jeanne Clinton, Advisor

Kelly Hymes, Advisor

Sarita Sarvete

ALSO PRESENT

Linda Wheaton
Housing and Community Development

Ramon Mendez
California Housing Partnership Corporation

Mary Jane Jagodzinski
Community Housing Works

Nancy Conk
Community Housing Opportunities Corporation

Mary Luevano
Global Green

Teresa Clarke
Affordable Housing Associates

Clare Bressani-Tanko
Local Initiatives Support Corporation

ALSO PRESENT

Ted Bardacke
Global Green

Nehemiah Stone
Heschong Mahone Group

Juliette Anthony
Californians for Renewable Energy

Fred Klaske
Habitat for Humanity
Sky Power Systems

Mark Johnson
Golden Sierra Power

Ben Ovshinsky

Stephen Heckeroth
Energy Conversion Devices, Inc.

Joe Henry
Pacific Gas and Electric Company

Todd O'Connor
Brobeck Solar

Patrick Sabelhaus
California Council for Affordable Housing

Mark Sinclair (via teleconference)
Clean Energy States Alliance

I N D E X

I N D E X

P R O C E E D I N G S

9:35 a.m.

CHAIRPERSON PFANNENSTIEL: This is the workshop on affordable housing for California for the solar program. I am Jackie Pfannenstiel; I'm Chairman of the Energy Commission. And with me is Dian Grueneich, Commissioner from the Public Utilities Commission.

This is a joint workshop because both Commissions have solar programs underway and in the design phases. And both programs will have an affordable housing element to them.

The reason for being here today is to gain your input. We're energy wonks and we don't always know as much about affordable housing as we need to know, certainly in the context that we are facing here, which is an opportunity to gain some solar installations using the funds available to put solar on affordable housing units.

We need to understand better the marketplace, the financial implications, the use, the technology limits to know how to best use our resources to help this market.

You'll hear a lot about the individual programs, the solar program that the Energy

Commission is developing and the one that the Public Utilities Commission is developing. And, in fact, they are two programs with different rules and different funding sources.

The Energy Commission's is targeting a very specific market segment which is new residential construction. So it's just new construction and just residential. And so a very different kind of need for this program.

Yet, on certain elements, and I would say specifically affordable housing, we want to make sure that the two programs are seamless. And that for those in the public and the community and the stakeholders who want to take advantage of these programs, we make it as easy and as transparent as possible to take advantage of what we would have to offer.

With that, why don't I ask Commissioner Grueneich.

COMMISSIONER GRUENEICH: Thank you. I'm very pleased to be here today. And I want to just emphasize what Commissioner Pfannenstiel just said, that we are committed to be working with the Energy Commission, as she said, and they are with the PUC, so that we do make the programs in this

area as seamless as possible.

That is just the way that these things evolve, that there are two separate funding sources; and there will be two separate programs. But our goal is to make sure that that's really maximizing the breadth of the programs, taking advantage of the expertise out there. And that so long as we work through in our commitment to make sure that they are seamless, that we think that in the long run this is going to be a better approach.

Just a little bit of background. I have been the assigned Commissioner at the Public Utilities Commission on low-income energy issues for about the last 18 months. And what that encompasses is the two areas. One is the discounts that are provided to customers of the investor-owned utilities if they do quality under the state guidelines for reduced rates.

And then the second area is a very extensive program that is administered by the investor-owned utilities for low-income energy efficiency measures.

And as a result of this involvement when we started to develop the solar initiative program

I became specifically interested in how we would tailor a portion of that program to also meeting the needs of low-income customers. And I'll just say that I find it a bit ironic that the description is affordable housing, because if there's one thing I know in California, is that if you are low income it is a rare, but very sought after item, if you can afford to get into affordable housing.

So you'll have to excuse me if I occasionally actually talk about this serving the needs of low-income communities. Because that's what is our target and this is one way that we hope it will serve those needs, by putting in investments that are not only good for the state in terms of overall diversity and security, but also over time reducing the bills of those customers. And that's certainly going to be a focus that I have.

I just wanted to end, really briefly, for those of you who are interested in low-income areas, last week in L.A. we sponsored a workshop on low-income energy efficiency. The information about it is now up on the PUC website.

And one of the areas that I'm

particularly interested in is integrating how we are approaching measures offered and programs offered on the energy efficiency area with how we are going to be going about doing this in the solar program, as well.

Because it's something that both energy efficiency and solar offer benefits to consumers, and, again, we want to make this a coherent program that is offered to consumers, as opposed to having to feel like you're choosing one or the other.

So I have decided that even though President Peevey is the assigned Commissioner overall on this solar initiative, he and I have worked closely over the last few months. And in this area in particular I'm going to be paying close attention so, as I said, we can make sure it interacts well with our energy efficiency programs in the low-income arena.

Thank you very much.

CHAIRPERSON PFANNENSTIEL: So, for moderating our day we have a large number of what look like incredibly interesting panels. Interesting, and to those of us perhaps on the learning curve, I think incredibly important

panels. And so we have Tim Tutt, who's my Advisor, and Jeanne Clinton from the Public Utilities Commission, to sort of help set the stage; and then help us go through the individual panels.

So, why don't we start with Tim? Or Jeanne? Tim, it looks like.

MR. TUTT: Yes, thank you. Welcome, everybody. As I'm setting this up let me go through a few housekeeping items very briefly. If you haven't been here before, you may know or may not know that the restrooms are right outside this door here, in the corner of the building. And also please turn off your cellphones or put them on vibrate so that the meeting isn't disturbed as we're moving forward.

If you do get a call, or out in the lobby, try to resist the temptation of leaving on that door, because the alarm will go off. It turns off pretty quickly, but it's a bit disruptive.

And finally, we usually have a system of blue cards here, where we ask people to fill out blue cards if they want to speak. But because of the format of today's workshop where there's

question-and-answer sessions after each panel, we're just going to ask you to come up to the podium and state your name. And then ask your question or state your comment at the appropriate time.

I'm pleased to be here -- that might help -- pleased to be here with my colleague, Jeanne Clinton, to talk about and set the stage for this move into move solar in affordable housing.

I'm involved here at the Energy Commission, clearly; and Jeanne at the Public Utilities Commission. We each have existing solar programs and are each developing new solar programs that we'll be talking about in this overview section.

We are in a transition between these old and new solar programs. Our existing programs jointly in the state have accomplished a great deal, adding about 150 megawatts since 2000. In that period affordable housing has really been participating in the KETCH program, because the Public Utilities Commission program has been limited largely to commercial, larger commercial systems.

In the next generation of our programs the California Solar Initiative and the companion piece, the New Solar Homes Partnership, we have much more aggressive goals of reaching 3000 megawatts of solar by 2016. And we will be addressing affordable housing at both agencies because of the way we're now dividing up the market there will be affordable housing opportunities for existing affordable, residential affordable housing, and larger affordable buildings which fall, to some degree, into the commercial category.

A little background on what's happened with solar programs and affordable housing so far. In 2002 the Assembly -- the Legislature passed, the Governor signed AB-58, which provided for special treatment of affordable housing in our solar program.

It had to be residential units subject to the standard affordability requirements in law; and it provided for a 25 percent higher rebate capped at 75 percent of the cost of a system. And also required that 10 percent -- that these homes, these affordable homes, be 10 percent more efficient than Title 24 if they were new homes.

Or took actions to increase efficiency by 10 percent for existing homes.

Over that time since that law was passed we've had about 200 projects in our program; spent about $2 million; and it's about 1 percent of the total program. Our goals, as we've talked in the new programs, is to reach at least 10 percent participation by affordable housing. So we do have a ways to go to get to that higher level.

In general, the affordable housing projects that we saw in our program were lower cost projects; on average of about $1.90, $2 a watt. About 20 or 25 percent less than our standard projects.

And we don't know exactly why that is, but it could be that a significant component, parts of a system, the labor or others were donated or were provided at cost rather than at a marked up retail price.

We know there's been challenges in the existing program related to sub-metering, installing systems on common areas of a property rather than on each of the individual units; with existing properties meeting the energy efficiency requirements, being able to document a baseline

where they can prove they've gone to 10 percent improvement in energy efficiency.

In our new program the eligible participants in technologies, again, as Commissioner Pfannenstiel said, it's new homes in the IOU service territories. We'll want to work with the publicly owned utilities to coordinate this statewide. But for our new solar homes partnership it's limited to the IOU service territories.

A builder, home installer or someone else could get the incentive. We're looking for feedback on that.

And the technologies have to be certified. Generally we're talking about photovoltaics. In the more general program solar thermal or electric generators may be participating. We haven't had any participation from those to date in our current program.

And then we hope to expand to solar thermal heating and cooling as we move into the program, phase that in. Right now we have not developed a program structure for those.

Other eligibility requirements in our greater program, we're expecting a very high level

of energy efficiency, at least overall, as opposed to just for affordable housing. We're moving to requiring at least 15 percent energy greater than Title 24, and perhaps much more than that. And perhaps having an enhanced incentive for a greater degree of energy efficiency than a standard level.

We also hope to incorporate requirements for advanced metering and solar rate designs as we transition into this new program.

Again, new residential buildings only. We will be doing low-income or affordable housing and multifamily apartments, but most of our general program is going to be larger production home market. And we're working specifically with the builder and developer community. We have a strong connection in doing that with our work on Title 24 building standards and our work with the building community in that regard.

I've already mentioned that we're going to be at least 15 percent beyond Title 24. Advice to date, when we talked about this with stakeholders there's been that EnergyStar or 15 percent is too easy. That we need to move the industry toward zero energy homes. That we need to really be kind of aggressive on getting energy

efficiency into these new homes in California. And, again, a probable enhanced incentive for higher energy efficiency levels.

We're talking about installing instituting for the larger program, what's called an expected performance-based incentive. That's where we pay an amount upfront that is tied to the expected performance of the system over time. And, again, I keep having this probable enhanced incentive for higher energy efficiency.

Wanting to raise the question of whether this general structure will work for affordable housing. And ask people to think about that; provide that in their comments or in their written comments.

And also we'll be doing ancillary assistance for the general market, including a significant amount of training, recognition of participants, technical assistance, guideline development, marketing and outreach. And wonder if there's any difference between the general market and the affordable housing market, and what kind of assistance we can provide other than the standard incentives.

If we were to follow the proposal, or

the practice today, of a 25 percent higher rebate, here's what the affordable housing rebates would look like. Because we've proposed, at least, starting at 225 for the more general program; decreasing over ten years to zero. And 25 percent higher looks like this.

Now, we would like to understand whether that's the right way to set up an incentive for the affordable housing structure. We're here to listen and try to understand how to really engage the stakeholders and develop a program that's really appropriate for the affordable housing market. And this may or may not be it. We're open to listening to differences.

I want to mention a little bit about PV performance issues just because we're doing an expected performance based incentive. We divide performance issues into three factors or three categories. Design and installation factors; and that are factors that are determined upfront when you pretty much install the system. It's the tilt, the orientation, the location geographically, how much sun gets in that location.

Site characteristics such as shading.

The way the modules and the inverters are connected together. There can be mismatched wiring losses and so forth.

Then there's for different -- there's degradation over time, which really is dependent on the PV system technology that's used. Most systems degrade at about the same rate, but it's not something that you can affect after you've installed the system.

And then there's ongoing normal performance factors like dirt and shading. And rain helps to clean the dirt off. Paying attention to shading as your trees grow helps to prevent shading from being a problem. Shading is a significant issue in the way PV systems generally are designed. That needs to be watched out for. And then there's weather variability which the consumer can't control.

Finally, there's infrequent, but significant factors like inverter failure or fuses failing. And those kind of factors are things that can't easily be affected by the consumer. You just have to watch out for them. And as your system seems to fail, you would be able to call and have a replacement in place.

Moving on, here's our anticipated -- a diagram that illustrates how we're expecting to calculate this expected performance. We have official weather files which will tell us what the solar radiation is in the particular location. We have design and installation factors that we'll include in a software program we're developing. Certified photovoltaic module performance characteristics and inverter characteristics.

And when we combine all of those in a program it's got a pretty user interface that we're developing, and it will tell you what the expected performance of that system is. We can base the incentive on that result.

And that's a general overview of where we're going with this program. It's a first-come/ first-served program that we've been developing in the general market for production homes. We've talked about a 24-month reservation period. We're going to be doing some field verification prior to payment. Some of it will go out and -- installers first will be asked to verify their installations of systems. And then there will be a third party that does a random sample to verify that the systems are installed as expected.

We do to roll in advanced metering infrastructure. And at some point, as that is rolled out in the utilities. We expect to contract out the administrative function for this program, both for the general new home program and the affordable housing component. And we'll include periodic evaluations of the program.

So that's a brief summary of where we are. We had a workshop yesterday where we presented this to the new solar homes partnership stakeholders. And we're going to be getting written comments on that by next week. And we'll be moving forward developing guidelines for the general program and the affordable housing program through the rest of this year.

And I'm going to turn the microphone over now to my colleague, Jeanne Clinton, to describe some of the CPUC program.

MS. CLINTON: Thanks, Tim. I might add a couple of housekeeping items. I know most of he handouts have long since disappeared on the entry table, so I think there are going to be more copied at some point during the day. And more importantly, all of the PowerPoint presentations are going to be posted on the Energy Commission's

website. I think that happens rather quickly around here, so for those people who didn't get a copy, they should be accessible if not later today, maybe in the next day or two.

And I might add that I think -- we're doing a webcast of this and we also have a telephone bridge connection for people who are not here today. So that just explains why it's important that whenever anybody asks a question or speaks that they use a microphone so that the people on the phone or on the webcast can hear the questions and answers, as well.

So, I'm going to try to cover a little bit different terrain than what Tim has presented. But for those of you who are not familiar with the self-generation incentive program that the California PUC has been offering, it's been focused on nonresidential systems, through the end of this year, 30 kilowatts and above. Has spent about $50 million a year; has 50 megawatts of solar in place; another 62 megawatts in progress. And is currently administered by the utilities, the investor-owned utilities, except in the San Diego area where the nonprofit organization, San Diego Regional Energy Office, is the

administrator.

Where we're going, starting in January, for the next ten years is that the PUC portion of this California Solar Initiative is looking at about a $2.5 billion total expenditure, with a goal of 2600 megawatts of solar. And by comparison, the new solar home partnership program that Tim just described has a target of 400 megawatts. But obviously working on a narrower slice of the California market.

The goal that we both share is to both support consumer adoption of solar, and to help, over the ten-year period, the solar industry to become self-sustaining so that the incentives can disappear.

In the context of today's meeting our focus is on the affordable housing and low-income set-aside of 10 percent, which, in the case of the PUC, will amount to approximately $25 million per year.

So, the CPUC program will target all existing homes, single family, low income, affordable and multifamily apartments, as well as new and existing commercial buildings, new and existing industrial and new and existing

agricultural facilities.

The way we have structured the work effort at the PUC is we've got two phases. Phase one, which I'm referring to today as the mainstream program, is already underway. And it has a goal of being implemented as of January 2007, just six or seven months away.

And we're looking at the incentive structure, a metering requirement to confirm performance similar to the Energy Commission energy efficiency requirements; a program administration that could be a combination of utility and nonprofit administration.

And what I just want to put in perspective is where we are in the timeframe of phase one. We put out a staff proposal on April; we had a public workshop on that in early May. We've received 500 or 700 pages of comments. And now we're working through all of that with the target date of releasing a proposed decision July 25th for a Commission vote or decision in August at their meeting. So that's the framework for the first phase.

The second phase is targeting at getting decisions and implementation in place by middle of

2007. And the affordable housing is in phase two, starting now with this workshop, which kicks off our work on that issue where we are obviously looking for discussion and proposals from the stakeholders and low-income communities, the affordable housing managers and housing finance entities in terms of how to go about doing this.

Then our timeframe is to have a proposed approach by the fourth quarter of this year. And in tandem there are other issues that will be going on in phase two about the entire solar program, marketing and outreach, research development and demonstration. Everything is important if we're going to lower the costs of solar and boost performance in order to be able to get rid of the subsidies by the end of ten years.

Also doing program evaluation and cost/benefit analysis. And deciding how the renewable aspects of solar energy are going to be treated in other policy cases such as the renewable portfolio standards, and renewable energy credits that may be traded in a trading market.

So, overall we have to have a proposal by the end of the year. And then a decision early 2007. That's sort of the two phases of the

activity that we're starting out with.

The principles that are guiding phase one, I just want to highlight, because we would expect to see these same principles guiding the affordable housing solar component. To eliminate the ratepayer subsidy; to strive to lower the effective cost per solar kilowatt hour or Btu, by improving -- adapting new technologies, enhancing system performance and lowering sales and installation costs. Some combination of those three is what we need to lower the effective cost.

As with the Energy Commission, we ar moving towards a system that is paying for performance. We're not going to be having incentives that are based on just the size of the installed capacity of the solar system, nor will the incentive be a percentage of installed cost. And I'll explain this on my next slide, what that looks like.

The incentive design principles that we have used in phase one are that the net solar cost to the solar owner or consumer should be cost competitive with the retail energy price of electricity; and should, as a target, offer a ten-year simple payback on a system that we would

expect to last 25 to 30 years.

This slide presents the specific incentives that we have proposed and received comments on in what I'm calling the mainstream program, where we have two different incentive levels, a higher one for residential and nontaxable entities, and a lower one proposed for taxable commercial systems. That differentiation is primarily because there's a substantial federal tax credit available to the commercial systems. And a comparable-size tax credit is not available to residential or to the nontaxable entities.

Similar to what Tim presented we've got an expected performance-based buydown for smaller systems that is a one-time upfront payment. But now it will be based on the expected system performance where you go into not only the solar system technology rating, but also the design consideration such as orientation to compass and tilt and those kinds of things.

So, just for your information, in the event that this approach might make more sense for affordable housing, for the larger systems we've proposed a performance-based incentive that would be paid based on the metered kilowatt hours of

output over a five-year period.

So, for example, a commercial system might be paid 17 cents per solar kilowatt hour of output every year for the first five years. And the residential or nontaxable large systems might be paid 26 cents a kilowatt hour for their total output.

In that system there is no upfront incentive. The owner pays cash or finances 100 percent of the cost of the system. And the performance is paid out over the five-year period.

So, the issues that we're looking at in terms of the affordable housing and low-income program are, like the Energy Commission, we started with initial thinking that perhaps in this component we'd pay up to 25 percent more in incentives than we do in the mainstream program.

The reason that we have worked together to organize this workshop today is we really want to hear from stakeholders what are your solar interests and goals for low-income and affordable housing communities. Will what I'm calling the phase one approach work. What approach would be better. And what else would be needed.

For example, technical assistance

activities; different kind of administration; perhaps consideration of financing or loans rather than incentive payments; ways to integrate the solar program more closely with your energy efficiency objectives.

So, that's what we're looking for today. And that concludes my comments at this point. And I will, I guess, let the lights go up a little bit and we can introduce our first panel.

And the first panel will be -- this is the teaching mode for those of us who come at this subject from the energy side, where we've asked Linda Wheaton and Ramon Mendez to give us an overview of affordable housing in California, as a backdrop for where we go from here with program design.

COMMISSIONER GRUENEICH: Jeanne, before we move on I just had a question.

MS. CLINTON: Sure.

COMMISSIONER GRUENEICH: Okay. Just so I can get the numbers in my mind a little bit more, that under the decisions adopted so far there'll be basically a 10 percent set-aside of the overall funding. And did you say that the estimate for the PUC portion of the program was

about $25 million a year?

MS. CLINTON: Yes.

COMMISSIONER GRUENEICH: And then do you have a number, or does Tim have, for what the Energy Commission --

CHAIRPERSON PFANNENSTIEL: We haven't set a set-aside at all. We have said that there will be an affordable housing element. We've not determined what percentage of the dollars would go to that.

COMMISSIONER GRUENEICH: Okay. And, Jeanne, has there been any determination made as to whether there would be an equivalent or a pro rata megawatt target goal, that since we are striving to get for the PUC portion about 2600 megawatts over the ten years, is your thinking or the staff thinking that we would also try to get 10 percent of the goal out of the 10 percent of the funding? Or is that an issue still to be examined?

MS. CLINTON: We specifically have not made that nexus. I think we have to hear how the program needs to be designed. And I think, quite frankly, the expectations are that it will take more spending per megawatt to get solar in place

in the affordable housing and low-income community. But we don't know the details of that.

COMMISSIONER GRUENEICH: Okay. And then the final one is have we set it up that there's flexibility in terms of the amount of money per year? In other words, depending upon how we design the program, what we see as participation rates, does it need to be literally 10 percent each year? Or is it just 10 percent overall?

MS. CLINTON: That's an approximation over the ten-year period. The California PUC made some decisions about the overall funding levels, which start high and then drop over time. But I think each subset of programs needs to look at the market and see what rate of absorption there is.

But the bottomline is that regardless of how the money is collected, there is a provision for borrowing ahead if the market picks up sooner than perhaps the funding was anticipated.

COMMISSIONER GRUENEICH: Okay, thank you.

(Pause.)

MS. WHEATON: I'm Linda Wheaton, the Assistant Deputy Director of the Housing Policy Division of the State Department of Housing

Community Development. And we're very pleased to join you here today, and eager to work with you on your respective initiatives.

As you well know, those of you in this room, developing affordable housing is a real challenge in this country, but particularly in California. So I'm going to talk briefly this morning, just an overview about the climate in which affordable housing has to operate, come about in California; and a brief overview of our delivery system for assistance within California.

COMMISSIONER GRUENEICH: Excuse me, were there any hard copies of your handout?

MS. WHEATON: I'm having some made.

COMMISSIONER GRUENEICH: Okay.

MS. WHEATON: Hope to have them here later today.

What we are, of course, in California, subject to a number of high demand influences. Chief amongst them being very strong population growth coupled with demographic change, so we have very dynamic conditions throughout the state.

We don't have a housing market; we have many housing markets in California. We have a situation of inadequate supplies overall, and

concentrated in particular areas; declining affordability. We've had favorable mortgage rates in recent years which have fueled housing growth. And we've also had markets where we have had strong employment growth.

So, just as a reminder, within this decade we're looking at over five million new residents. That's a lot of folks. We've been talking about 300- to 600,000 new people a year. This growth is increasingly concentrated in southern California in particular, but with the highest rates of growth in the Central Valley.

So, the challenge of housing what in 2020 will be what three Californias were in 1960 is really daunting. And probably also certainly in the energy field, as well as the housing field.

Throughout much of the country there's been a lot of focus on the growth of the aging population. In California we certainly have growth in the aging population, as well, but we also have, overall, a younger population than many other states do. So we have growth kind of throughout our age segments, but we do have very high demand in our early career, which is both the apartment and new home buyer market, as well as in

age groups with college age and retirement.

So, overall we need a greater mix of housing types for the spectrum of the growth that we face. We have particularly acute housing shortages, of course, near our coastal job centers. And so that, in terms of the geographic distribution that our programs strive to maintain, maintaining support and assistance in these areas is particularly challenging.

We've had -- the housing industry is, of course, cyclical. We had a period where we really had a real decline in shortfall and housing shortages in the '90s, part of which was driven by not only economic conditions, by demographic change. We had a higher proportion of the population growth was in children.

We have projected an average annual housing need in the state over about till 2020 of right around 225-, 230,000 units a year. That's for total housing stock.

As you can see, in the composition, the dark blue being the single family, the light blue the multifamily, we are nowhere near that, reaching those kind of levels of construction. And the multifamily sector in particular, at the

same time that we have a higher need for a greater proportion of our housing to be in compact or higher density and multifamily structure type, we actually have a -- we used to have as high as 45 percent of our stock in multifamily, on average. And now it's more like around 25 to 30.

So, for just over roughly the last ten years, in terms of the annual average being represented, we've been at about 160,000 permits a year, a far cry from the 200-plus-thousand annual average need identified.

And so, I mean we peaked in 2004, and 2012 in the forecast in permits, in new permits for this year is still on the downside of this. So keeping production up is a particular challenge for all of us. And certainly in the supply, in the entire sector -- in the entire market affects the affordable sector very directly.

Just a reminder that we -- our rental vacancies have been amongst the lowest in the country. One of the ways that California sustained some of the growth that we did in the '90s during the real shortfalls of production was eating into our vacancies. So we hit particularly low vacancies in our major urban centers.

And you've probably seen, we've had, as a result, growing condo conversion activity in the state, particularly concentrated in some markets. San Diego in particular has had a real strong market there, and so there's a lot of renewed local government activity in regulation of condo conversion.

CHAIRPERSON PFANNENSTIEL: Excuse me, Linda. May I just ask on that, an earlier slide showed that about 25 to 30 percent of the new housing was multifamily, and the rest was single family.

The condos are multifamily?

MS. WHEATON: Yes, for the most part they are.

CHAIRPERSON PFANNENSTIEL: Okay, thanks.

MS. WHEATON: So, the supply, then, these kind of shortages, these kind of conditions affect housing affordability, and they have -- we have everything to deal with from rising rents, really high land prices, very high cost burdens -- I'll talk a little bit more about -- increasing numbers of households and very inadequate subsidies.

So, the affordability index, the gap

then between California and the U.S. has been widening. And so this illustrates that the portion of households that could afford a median price detached home has been steadily declining, such that we have affordability indices below 10 percent in some of our counties.

Look at Monterey, for example; Contra Costa and some of the coastal areas down here, Santa Barbara, San Luis Obispo, San Diego, Mendocino, Sonoma, as of last fall, were below 10 percent. These are extremely tight markets.

And rapid appreciation through almost the entire state. When you see the kind of prices in the Inland Empire, for example, from 176 to 412 in just five years, that which is traditionally -- and in Fresno, even, the rates we're seeing there, we're losing what has been traditionally some of the areas of the state where it's been possible to develop affordable housing for lower income households without direct subsidies, or without deep subsidies.

But even in the market now, we've seen it recently -- immediately, we've seen a recent dampening in many of our housing markets, but not everywhere. So Sacramento and San Francisco have

held pretty constant. The Central Valley is up, the figures I just showed you, in December. Los Angeles is up; Riverside County has been pretty constant; and San Diego is up.

So, today we're looking at a median housing price in California of $560,000. So the affordability indices, then, in this comparison from December to 2005, have obviously been significantly declining.

And at one point you would say, when does this ever stop. The figures are very hard to believe. So we have, though, one of the amazing things is, is that we have been able to, even though we have amongst the lowest home ownership rates in the country, we have been able to hold steady with just slight increases.

And how has that been possible? That's been possible because of the proliferation, because of the favorable mortgage rates, and because of the proliferation of mortgage instruments, including a lot of zero down payment; and options. In fact we are, in many markets and cases, seeing people heavily over-burdened, and rising default rates. Quite possibly we'll see additional regulation in this area because of

these circumstances. We have a lot of families that are on the edge.

And just in terms of the rental markets, as well, there are big issues of wage gaps. We're second only -- we're in a class only with Massachusetts in terms of the differential between our wage gaps and our rents. When a worker earning $6.75 an hour has to work 126 hours a week to afford an average two-bedroom unit, that's tough.

And, as I indicated, throughout the state in many of our major markets. So there's been a lot of activity at the local government level in trying to give housing preferences for public employees, for public safety officials. For police, fire fighters, teachers and so forth who can't afford to live in the community.

One of the effects of this has been is that we have a broader and broader spectrum of an affordability gap; and a broader and broader claim of the sector on public subsidies for housing costs.

And another area, of course, where we really see the big differential is when you've got the greater gap between the location of the

affordable housing and the job growth, say for your retail workers in contrast to where those locations are being built, they're faced with ever longer commutes and impose other kinds of costs.

So, even in markets though when we have had increasing sales and we've had some record level of sales in recent years, we were still seeing rapidly appreciating home prices.

And while the housing affordability index for the U.S., on the top by the red, has been declining, you can see California has been declining at a much steeper rate.

So, one of the ways then we measure a look at housing need, relative housing need, is by cost burdens and over payment by the different income categories. So housing assistance, as defined in federal and state standards, goes from a range of extremely low to moderate. This focuses on extremely, very low and low income households because these are the most prevalent assistance categories for government-assisted affordable housing.

The extremely low income category is the most recent addition; those earning approximately 30 percent of area median income, with moderate

going up to those earning approximately 120 percent of area median income, with a lot of folks in a number of programs trying to push the moderate level ever higher, so we get this very very broad spectrum of increasing demand for assistance.

And, of course, at the extremely low level here you're looking at a need for very deep subsidies.

So, the range then, the continuum of housing assistance at the federal level is quite broad. It goes all the way from homeless shelters and transitional housing -- the Governor has an active housing initiative, or homeless initiative right now -- so that is very heavily -- we're very heavily dependent in homeless funding by the federal government in particular. The state's program is the emergency housing assistance program.

We have growing programs and demands for support of housing. Where we have housing with onsite services, or required to have direct access to services. Public housing, some of the supportive housing, I want to backtrack here, the McKinney programs and section 202 are direct from

HUD. Public housing is the Hope VI programs, for example, which has been the conversion of existing public housing. And the new housing has not been used as widely in California as in other parts of the country.

But most of the action going on in the public housing sector relative to section A vouchers has been the federal government's proposals to substantially revise and, in effect, reduce the program.

The redevelopment assisted housing I'll elaborate on later. Rental housing, the predominant rental housing programs in California ar the low-income housing tax credit, which again is a federal tax credit. We also have a state tax credit administered with it. And the multifamily housing program. The former administered by the Treasurer's Office and the latter by HCD.

Then there are a proliferation of first-time homebuyer programs. From those administered by Cal-HFA and HCD to local redevelopment agencies, and local governments. And the kind of climate I've been describing with some of these home prices, however, many local governments' programs haven't been able to operate; they

haven't got enough, a high volume of funds, it's pretty hard for them to operate in this kind of climate, or to operate at any significant volume.

And, of course, we have a variety of conventional loans and mixed rate kinds of programs. So this is the continuum within which most of our housing assistance programs function.

Oh, I'm sorry. Just a little overview on the -- I can't emphasize enough the importance of the federal role in direct government assistance. The federal role, however, in direct housing assistance has been declining substantially. It's on a rapid decline, and as we speak, we're looking at, in everything from mainstream programs, kind of bread-and-butter general purpose community development block grant programs, to the more targeted programs that I referred to in the section 8 program.

For example, we're looking at declining federal assistance, the declining federal role that makes it especially tough for the state.

And just a reminder that the primary federal housing assistance is in the mortgage interest deduction, and so by comparison the direct expenditures are but a fraction of that

assistance.

And housing does not constitute direct housing assistance constitutes a very small portion of total state expenditures.

So much of the direct housing assistance we do have available is available at the state level on a competitive basis. So there are 535 cities and counties, an untold number of nonprofits and housing authorities, and private developers then that, depending on the program, compete for this assistance.

The primary agencies involved in that are the California Housing Finance Agency, our agency, the State Department of Housing and Community Development, the Treasurer's Office through the debt allocation committee, which allocates mortgage revenue bonds, and the tax credit allocation committee, which allocates the low-income housing -- which operates the low-income housing tax credit program I referred to.

So, many affordable housing developments are dependent on multiple subsidies from one or more of these agencies. And we might be talking about as many as what, three to 12 different kinds of subsidies. So we have a lot of work just

amongst ourselves in coordinating our funding schedules, coordinating our application criteria, and requirements for this. Because each program has specified criteria.

And then in addition to those state agencies, on a competitive basis, there's also direct funding assistance available from HUD. I've referenced some of the homeless programs, for example. And from the other in California the USDA's rural housing is very important, particularly in funding our farmworker housing assistance programs.

So, as I referenced then, we're talking about lots of players here. Lots of agencies, at the both federal and state level, as well as a lot of cities and counties, many nonprofits and for-profit developers. So lots of players, lots of different criteria for different programs and different sizes and different sophistication of the applicants.

Including housing authorities, as I said, that operate the housing choice voucher, a section 8 program; redevelopment agencies at the local level are one of the mainstream operators of a number of these programs. And some local

governments in addition to redevelopment agencies, will have their own housing and community development programs, most commonly which administer the federal block grant funds, community development block grants; the home funds or the emergency shelter grant funds.

Another way that we influence the housing market in California is through land use. And this is -- we've long been active in land use regulation in a intergovernmental basis in California.

So it clearly is an issue of state right concern. One of those areas that that's implemented and reflected are requirements for periodic updating of local housing elements of general plans.

So right now the SANDAG jurisdictions are most actively engaged in their updates. They have statutory updates when these are due. The next local governments in the state that are lined up to be due are those in the southern California, Kern County, SACOG and the Association of Bay Area Governments.

So a part of that process, a planning for updates of housing elements involve what is

called fair-share planning or regional housing need planning where we plan -- they're required to plan for capacity and zone for capacity for a full range of income groups.

Other objectives of the law include promoting infill development and socioeconomic equity, a protection of environmental and ag resources, improving jobs/housing relationships, and balancing disproportionate income distribution.

So these are the kind of issues where they work out in their housing element that have strong public participation requirements. They do have to identify energy needs amongst their needs assessments. They have to identify specific sites with development potential and including accommodating lower income households in particular. And programs and timetables to implement those.

There are a number of other land use requirements in state law that also support affordable housing development that can be used to support those. And they range from redevelopment law, as I mentioned, to second unit law, fair housing law, state density bonus law where they

can qualify for density bonuses and waiver of incentives for development of affordable housing.

So, redevelopment agencies, I think you're probably familiar with, use the increment, the increase in the property tax increment. They have to set aside at least 20 percent of that to assist affordable housing development. They can undertake a variety of activities in doing so, but they have very explicit inclusionary requirements within their project areas and the development that does occur.

They are also responsible for reporting annually to the Controller's Office and to HCD, both of whom issue reports on their activity. And in HCD's case, on their affordable housing development activity.

So, there are significant funds available at the local level. In the fiscal year 04/05, for example, their ending equity was 3 billion; they deposited 1.2 billion; expended 960 million; and assisted over 17,000 households.

Much of our current activity at the state level is in administering the Prop 46 bonds; the 2.1 billion that were programmed to go through 2007 for the most part. So we're in the wind-down

stage of many of those programs where we have, with a broad range of programs, from home ownership to rental, to the whole continuum that I showed there, it's pretty much what we've been operating on from Prop 46 in addressing those programs.

There is a proposal for the November ballot that would authorize 2.8 billion in total, but 1.8 billion for direct affordable housing assistance that would continue to fund many of those same programs.

So, that's a very brief overview of the tough climate that affordable housing development has to occur in within the state, and of the delivery system. And so if there's any general advice that I would give you, it is keep it simple. Because there's already loads and loads of requirements involved with this development.

Thank you.

CHAIRPERSON PFANNENSTIEL: Thank you, Linda. I think that we'll have our next speaker and then maybe ask both of you to field questions. Thanks very much.

MR. MENDEZ: Good morning; my name is Ramon Mendez. I'm with the California Housing

Partnership. I'm going to back up with a really big picture, that was very impressive and comprehensive, and sort of go back to some basics in terms of how to build with the affordable housing building development world.

Because when I was looking at the earlier presentations, and you have your three programs, which is single family, low income and multifamily. And so I was just thinking about it, said, well, there should be a fourth category which is affordable single family and multifamily, as well, because it is its own subset. And as you saw from Linda's presentation, it is a very complicated world that we operate in.

So I wanted to retitle my presentation here from overview of nonprofit housing to I want to retitle it as overview of affordable housing development. Okay. And I'm just going to talk on some brief topics, which is what is affordable housing. Linda's already touched on why is there a need for affordable housing. Who develops affordable housing and how are public agencies involved.

Okay, so, just from a basic definition, affordable housing in terms of how we in the

affordable housing development world look at it, is affordable housing is for people who pay too much of their income towards housing costs, and that's either for rental or home ownership. And the federal government defines it that a household should not pay more than 30 percent of their income towards housing. So, in our world it's income driven.

Okay, so we actually take the for-profit development world and flip it on its head. They see can we charge rents high enough to build this, and in this environment. Whereas we turn around and say, we're dropping the rents down; can we find other money to build this.

Okay, so just a basic definition because this is the crux of all our programs, is what is an area median income, and it's basically the -- it's percent. A lot of our programs are based on area median income, as opposed to the average, which is a more sensitive -- I'm sorry, sensitive to extremes. So everything's based on area median income and our programs are either on a county area median income, or a state area median income if you're using HUD programs.

And so it's a formula that theoretically

sets the rents at certain affordable levels. So we always talk about at or below a certain AMI. So, the definitions which were referenced in earlier presentation, low income is fairly defined as 80 percent AMI or below; very low income is at 50 percent or below; extremely low income is 30 percent or below. And I know your programs can go up to 120 percent or below, and those tend to be more for the home ownership programs. So the ones I'm referencing here are usually for the multifamily housing programs, okay.

Now, the funny thing is even though low income is defined as 80 percent or below, most of our programs, the tax credit program, local funding programs, have a maximum allowable AMI of 60 percent if you want to apply their funding towards the project.

So this is just a graphic representation for those of us who are visual learners. Again, the median is just everybody lined up. It's the middle person. And so we start, for example, at 50 percent or below; and so we're targeting those people on the lower income scale.

Okay. So how do we developers set the rents? Well, again, we can't charge more than 30

percent of household income, and so we start with these tables that HUD puts out and gets translated by various funding agencies. And assumes a certain number of occupancy per person. Some programs have a 1.5 persons per bedroom; other have other factors.

And so we start at the rent, again; we start with rent levels and work backwards. From there we subtract a utility allowance from that maximum rent. And this is again to allow tenants to have some money to pay for their utilities, excluding telephone and cable, which is why doing zero emission programs with these energy efficiency helps, because it means that they don't have to pay -- or they get to save money. Okay.

And so these utility allowances are provided by the local housing authorities, and this is going to be one of the issues brought up later, which is the coordination of the utility allowances that are determined for these affordable housing projects is done by an agency that is separate from your programs. And the coordination has to happen between them. The education of the public housing authorities of zero emission or lower utility cost programs.

So, Linda talked about the types of spectrum, the continuum of affordable housing. And this is just another category, which is a lot of our programs focus on working low-income large families, senior projects, special needs or supportive housing projects which is the new pipeline coming in. There's money being generated by the State of California addressing these needs. And so we're going to see a lot more developments in the supportive housing programs.

And those can target people who are homeless, HIV/AIDS dual diagnosed, domestic violence and emancipated youth, the definitions of special needs for the housing changes and expands and contracts as needs are identified.

Other affordable housing target populations include rural or farmworker housing; single room occupancy. And that could be the new construction or the acquisition rehab of old SROs, that are old hotels usually that have single rooms, maybe with a shared bathroom or kitchen. And there's all these rules of buying them and renovating them.

And then on the home ownership, there's the home ownership, which is the single family

developers, and then there's a couple of innovative projects that have done a quasi multifamily ownership which is the limited equity coop, where it's a multifamily housing project. And after a certain period of time the ownership goes to a board that is comprised of the tenants.

So, what kind of projects are being built? A lot of us just do 100 percent affordable housing; that is, all the units are targeted for low income. We're required to build a community space, both for use of the tenants and maybe the local community; space for social programs and appropriate amenities, depending on the target population, such as tot-lots, childcare centers. It really depends on the population you're targeting.

Because of smart-growth issues, there's a trend now of doing mixed income, where you have not only affordable units, but you have market-rate units combined in the same project. And also mixed use with commercial space. So you would have, you know, retail on the ground floor and your affordable housing up above.

So, who builds and owns affordable housing? We have nonprofit housing development

corporations, for-profit development companies, public agency development entities, and joint ventures of these combinations.

Okay, so what is a nonprofit agency? Much to a lot of people's surprise it doesn't mean that you don't make money. It means that you have an IRS designation of a 501(c)(3) which is that you are exempt from paying the federal taxes as long as you're providing a public benefit. Okay.

There's different types of nonprofits. You have neighborhood base with the target neighborhoods. Rate-based regional and government-affiliated ones.

The advantages of working with nonprofit developers is that they are mission driven. They are dedicated to creating and maintaining the affordability to, over the long term. How long, you may ask. A lot of our regulatory agreements, when we get financing from public agencies, require the owner to own and maintain the affordability requirements for 55 years in exchange for their loans. So we're looking at a long-term commitment here.

The other advantage with a nonprofit is that they are exempt from paying the California 1

percent state tax. It helps in generating more money to leverage more bank loans, and so it's one of the benefits available to nonprofits.

The potential disadvantages, and this is not across the board, but some may have like a capacity or like a financial stability, but that is not across the board.

Nonprofit housing developers don't do just -- they don't only necessarily build affordable housing, they also provide for social service programs, economic development programs, community development programs. So, a lot of times they do more than housing. Okay.

On the for-profit side, these are public held or publicly traded companies. The advantages of for-profit developers, they tend to be faster, less bureaucratic in decisionmaking. And they might have access to private capital that a nonprofit may not.

Potential disadvantages that might be a tension between profit and affordability. If they realize that their developer fee is going to be cut in, they'll start cutting back on finishes, and what-have-you; whereas, I think a nonprofit would probably go back and get more money from the

local agency to try to make the deal work. And the other thing is they are not eligible for the property tax exemption that a nonprofit is.

Some public agencies develop housing, themselves, or they have created a 501(c)(3). They also have pros and cons. One is that they have direct control over their own funds, because they're related to the public agency. And it is for the public purpose. However, they tend to have a greater bureaucracy and they don't necessarily have dedicated staff, because development is a seven-day-a-week job.

And so I mentioned before that joint ventures can be very common depending on the situation. And joint ventures can be between two nonprofits or between a nonprofit and a for-profit. The key thing is that you want to make sure that it makes sense, that there is a matching of strengths and that the weaknesses are being compensated for.

The potential disadvantages of joint ventures is that it's more heads to make decisions. So you end up, decisions end up taking longer. And sometimes there's a lack of clarity in rules and responsibilities.

So, now this is just a real brief overview of how -- the difference between how a market rate developer would look at a project versus an affordable housing developer. Okay.

So, let's say a project is going to cost $18 million to build, and this is, you know, for land and construction. And so it costs so much to operate a project, and so again, the market rate developer is going to look to see can I charge rents high enough in order to leverage enough of a bank loan, in addition to the equity I have to put in as the developer, to come up with the money to build my project.

So, in this case, they would have to charge $2200 a month in rent to cover the debt and the operating expenses. And in this case it falls around 130 percent AMI. So not even in the affordable range.

And the next slide, let's assume it's the same project; it's going to cost the same. But it's being built by an affordable housing developer.

Again, we flip it around and say, we're going to target 40 percent of AMI for example. So these are the maximum rents that can be charged

there. $650 is the maximum rent I can charge, in contrast to the $2200 that would make sense for a market rate developer.

So, based on that income on charging that rent after expenses and my mortgage, I can only afford a $4 million mortgage in this scenario because I've lowered my income. And so the question is how do I come up with the rest of the money to make up my $18 million. And so the list that Linda presented earlier, so it's a combination of tax credits, perhaps bond financing from --, perhaps money from HCD, and then you have local city financing, county financing, redevelopment. I mean it does become a patch-quilt of financing, where again it's like anywhere from six to 14 funding sources have to be coordinated.

So the role of public agencies in affordable housing. Again, they provide what's called gap financing. Other than the bank loan, having to come up with that other money, it's the 55-year loans at low interest rates. Usually anywhere from zero percent to, at the maximum, 5 percent interest rate. With little or no mandatory payments on that debt. So it's viewed

as an investment by the public agency. It's a public benefit that they're providing.

And hinting at this as you talk about whether your program should be rebates or loans or whatever. It's cheap and free is the best way to go at it; just my opinion.

And the other thing that public agencies do in affordable housing is that they conduct annual compliance monitoring to make sure that they are, that their money that they've lent to this developer, the affordable housing developer, is that they are in compliance and renting to those income targets that they were promising.

So, in short, affordable housing, it's income driven. It's all about, it's about making the rents affordable to people at the appropriate income levels. It means different things depending who you're targeting. Senior housing versus special needs housing. Those are all going to be different income levels and different types of projects.

And more importantly, it requires cooperation and interaction between many parties. Developers, multiple public agencies, --investor, and 14 attorneys who all of, what should be done.

Okay.

CHAIRPERSON PFANNENSTIEL: Thank you very much. I have a couple questions, and I assume Dian has a few, and maybe Tim. And then I'd like to invite others to ask questions. If you do, please come to the microphone, I think, and identify yourself.

My first question is really very general, and it has to do with the development phase. Once the building is developed, and people move into it, who then actually owns it and pays the common area expenses and that kind of thing?

MR. MENDEZ: It is -- the developer is usually the owner, as well. So, the examples up there where I said it be a nonprofit development corporation, a for-profit or a joint venture between the two, they would be the long-term owner usually for the 55-year period.

CHAIRPERSON PFANNENSTIEL: So then, getting back to our question, if there was solar installed on this building such that the savings flow to the common areas rather than the individual units, it would be the developer then would save, and that would help the overall cost of the building?

MR. MENDEZ: Yes. You'll see a case study later today where the rebate is being applied during the construction period, so it ultimately results in a lower cost to the developer, who is also the long-term owner of the project, which works ideally in the situation.

CHAIRPERSON PFANNENSTIEL: And then another question is of the new affordable housing units being developed in California, are most of them new greenfield, or are they renovations and remodels of existing buildings? What is it? Is there a sense of how that's coming out?

MS. WHEATON: They're a combination. They're everything. There's a lot of activity is mortgage assistance and rehab. And in some markets, in particular, the new construction, you know, it's -- going to be the development period for a number of these developments, it takes years.

So, it's a combination. I would say if you want to hit the market you're going to have to aim for both existing, for rehab for existing, as well as new construction.

CHAIRPERSON PFANNENSTIEL: One of the reasons I'm asking the question, of course, is

that the Energy Commission's program is targeting new construction. And the Public Utilities Commission program would be remodel, retrofit on existing buildings.

And so we're trying to think about whether it really matters, you know, whether there's predominately one or the other. But what I'm hearing is that it's mixed and you need to focus on both.

MR. MENDEZ: Yeah. If I could add to that, too. In the last meeting there was also -- there has to be a distinction between home ownership programs, as well as new development, multifamily development programs. Because they are two different worlds. And with the ultimate owner being two different parties. Home ownership, the owner, you know, the homeowner. Whereas in multifamily it's the nonprofit or for-profit company who will be also the long-term owner.

CHAIRPERSON PFANNENSTIEL: Great, thanks -- I'm sorry --

MS. WHEATON: And, of course, the multifamily, more of the single family is greenfield than multifamily.

CHAIRPERSON PFANNENSTIEL: Yes. Thank you. Dian.

COMMISSIONER GRUENEICH: Yeah, I just wanted to follow up on that a bit. If we're looking at the world of single family versus multifamily, and then looking at new homes versus the term that we use on the energy efficiency side, which is retrofits, going in and essentially, from our viewpoint, trying to make a home more efficient. But obviously in the case of affordable housing it may be doing other upgrades, as well.

Is the community of people involved in getting the financing and making projects happen pretty much the same when it's multifamily between new multifamily and also going in and doing retrofits? I think that's what I just heard, whereas it's quite a different community that's going in and working in the single family.

MR. MENDEZ: That would be absolutely correct. The home ownership single family world I would say is pretty different from the multifamily. So, in the multifamily world we do do both new construction and in terms of acquisition rehab, or retrofit as you're calling

it, it can vary from a minor rehab, anywhere from just, you know, some paint and some new finishes, all the way to where they actually gut the entire insides and start all over. And that's still considered an acquisition rehab and not a new construction. In that world it is pretty much the same players.

COMMISSIONER GRUENEICH: Okay. Because one of the things we're looking at is sort of how to design the program between the two agencies.

The other thing that I just wanted to -- I guess two things. One is I wanted to make sure I acknowledge other folks here. Kelly Hymes who is sitting in the audience, Kelly, if you want to raise your hand. She is my Advisor, who's helping on low-income issues. And then also Sarita Sarvete. Sarita is the head of the PUC's low-income program.

And I just wanted to have a couple of brief comments, which is at this low-income workshop that we held last week, which got about 250 participants. We had a very interesting initial speaker from the Public Policy Institute of California. And we're having that presentation posted on the website.

But, what she explained to me and to many others, was the background for how the low income definition has been developed historically by the federal government. And basically was developed, I don't know, 40 years ago based upon caloric intake. That somebody sat down and figured out for a family of four how many calories do you need to eat in order to be healthy.

And then it was assumed that you could afford to spend one-third of your budget on food. And that gave the equation for what a family of four needed to survive, the cost of that caloric intake, multiplied it by three, and that was it.

And since then the federal definition has simply been adjusted for inflation. And at no point in time has there been any examination of the costs of housing. And so that when we see the statistics that we see in California on the incredible costs of housing, and then you pair it against what is defined as a low income family in the United States, you just run into this incredible discrepancy between being able to afford housing.

So, I just wanted to say it really resonated hearing what happened last week about

the definition of low income with this tremendous problem we face here in California.

CHAIRPERSON PFANNENSTIEL: Tim.

MR. TUTT: Yeah, I did have a couple of questions. Is there much mixed use development involving affordable housing? I mean with commercial --

MR. MENDEZ: It's the new trend.

MR. TUTT: -- units, artists lofts?

MR. MENDEZ: Artists lofts, maybe Ventura that got killed recently, but there is a trend in smart growth. And usually you'll find that in urban infill projects. So like in San Francisco, Los Angeles, for example, and San Diego you're seeing more and more mixed use projects being developed.

MS. WHEATON: Certainly in our major urban centers it's very prevalent, I would say. Not -- less so in some of the smaller metro areas.

MR. TUTT: In the past in these affordable housing programs have there been a significant energy efficiency or green building requirements included? Are you aware of those? And if so, how do they affect the utility allowance structure?

MR. MENDEZ: The tax credit allocation committee, TCAC, was the first one who provided incentives, and I'm going to show those a little bit later today, if you incorporated energy efficiency and/or more innovative technologies.

And CDLAC followed recently because they try to match up. And I think what it is is that we're -- now in the developers' world we're trying to figure out -- have been figuring out how to incorporate those into our projects, because they do make sense in terms of reducing the utility cost, especially after the energy crisis. And where a lot of our projects, we had to dip into our operating reserves to pay our electricity bills.

You know, in order to avoid that in future crises, I think the development world is definitely looking at how to incorporate these technologies into our projects.

MR. TUTT: Is the California Housing Partnership Corporation a government-created nonprofit corporation?

MR. MENDEZ: We are the only government-created nonprofit in the State of California actually.

MR. TUTT: Okay.

MR. MENDEZ: We were created by them to address the affordable housing crisis. But what we do, in essence, is we're financial consultants to the nonprofit development world, as well as providing technical assistance, training opportunities, and policy issues on preservation of housing.

MR. TUTT: One last question. In the patch-quilt of structures that you both described out there today, who has the most sort of administrative experience and oversight authority in the -- I'm trying to get at what would be a good nexus to really address the programs that we're thinking of setting up.

MS. WHEATON: As a practical matter I think you have to talk to all three agencies.

MR. TUTT: Okay.

MS. WHEATON: We all, you know, we're all very active; some different niches, together.

CHAIRPERSON PFANNENSTIEL: Okay, now I'd like to invite anybody in the audience --

COMMISSIONER GRUENEICH: Let's see. Jeanne, do you have any questions?

CHAIRPERSON PFANNENSTIEL: Yes, go

ahead, Jeanne. Of course.

MS. CLINTON: I have one basic question. I don't know if either of you has this information, but I'm looking for data to try to characterize the inventory of affordable housing that we'd be talking about in terms of, for example, how many new affordable housing units are being developed in a typical year. And what is the existing stock of affordable housing units. So we can just get some order of magnitude.

I know that they come in all different shapes and sizes, and it's probably hard to answer.

MS. WHEATON: The question you raise is a prevalent one, and precisely because of the fragmentation of the system I described, there is no -- there are no reliable estimates. There is no central collection agency. Some of it you can't simply total up the sums from different programs because some of them have joint financing. We have, at different times, tried to tackle that.

We are going through the regulatory process at HCD for implementing an existing state requirement for every city and county to report on

their progress in meeting their regional housing need which would, in effect, have them reporting on all of their affordable housing development.

Redevelopment agencies do report, if -- the figures are reported there annually. And some local communities will report, even have on their website, the figures, whatever.

But there is no reliable basis for kind of statewide estimates. And then you get into very much by which definitions and so forth. So there's some figures thrown around, but they're not -- what can I say -- there's no reconciliation agency.

MR. COLLORD: Linda, with respect to the new construction need figures generated by HCD for various regions of the state, what portion of that tends to be for lower and moderate income households versus market rate households? And, also, do you have any sense of what portion of that typically is actually constructed at the local level?

MS. WHEATON: Well, again, that varies a lot. But we're talking, you know, typically at least 45 percent are going to be probably for lower income households at the 80 percent or lower

level.

And the hardest part to reach the construction targets is definitely in the very low category, which is about the 50 percent or lower level.

So we have estimated in the past that we would need support for direct subsidy for at least 53,000 units on average a year. No matter what we do, is a drop in the bucket.

CHAIRPERSON PFANNENSTIEL: Are there other questions, or should we move to our next panel?

MS. CLINTON: If I could just follow up on that. Do you know how many new, approximately new affordable housing units are needed per year? Let's just take that 53,000 figure. Would it be reasonable to say, well, housing lasts 30 years, so if we multiply by 30 that would give us an estimate of the existing stock?

MS. WHEATON: No.

(Laughter.)

MS. WHEATON: A big issue in the existing stock, a lot of the existing, older existing stock was federally subsidized and part of what CHPC was created for, predominately we

started losing federal use restrictions on both section 8 vouchers and prepayment of mortgages on a lot of the federally assisted stock.

So one of the other issues that I really didn't address here is that we are losing -- I mean existing stock is point in time. And so the trend toward 55-year affordability controls was first imposed in the state in the low-income tax credit program. And correct me if I'm wrong, Mary Ellen, but I think about 1990, somewhere around there.

But before that use restrictions were like 20 years. Or I mean a lot of the local inclusionary units you'll see figures on local inclusionary production. Most of those did not have long-term affordability requirements. They were point in time and gone.

So there is no, for a combination of reasons like that, there's no basis for estimating -- we can estimate the existing stock in certain programs, especially those that are still subject to monitoring by the financing agency. But that's not a basis for an aggregate.

CHAIRPERSON PFANNENSTIEL: All right, I'd like to then set up our next panel, the panel

on expectations and goals for solar in affordable housing.

(Pause.)

MS. JAGODZINSKI: Are we ready?

CHAIRPERSON PFANNENSTIEL: Yes, please.

MS. JAGODZINSKI: Commissioners, ladies and gentlemen, I'm Mary Jane Jagodzinski with Community Housing Works. And I sincerely appreciate the opportunity to present a case study and a real live developer's input with regard to the existing status of photovoltaic and solar, and what, as you're fashioning new programs.

Just a 15 second, Community Housing Works is a San Diego based nonprofit. We have a 20-year history and we are a developer and owner of 25 affordable rental apartment complexes all throughout San Diego County.

Some of them we've developed and built, and some of them we've purchased and rehab'd. They total about 1300 apartment units. We have about 300 units more or less in the pipeline. And our projects vary all the way from farmworker housing in Fallbrook, projects in the inner city of San Diego, as well as a nationally recognized inclusionary project that overlooks the LaCosta

Resort golf course.

We do also offer resident services. Part of our mission is helping families and communities move up in the world. And, as such, we provide services in learning communities. And it's an interesting statistic that last year of the residents who left our complexes, 14 percent of them became first-time home buyers.

What I'd like to do today is briefly talk about a case study of a project that I have in construction called Solara. Just give you a little bit of description on that, as well as the project finance. And then move on to, I think, the two questions of why don't affordable housing developers use solar more. And what do affordable housing developers need to start using solar. Again, this is from our perspective.

Solara is my pride and joy. It's a project that we have under construction in Poway. It's 56 apartment units on a two-and-a-half acre infill revitalization site. It's two-story residential. It's six buildings; the seventh building is a single-story 2000 square foot community building, which has a community room, a kitchen, office and also our computer learning

center.

It is serving residents who are between 30 and 60 percent area median income. And in San Diego area median income is in the high 60s. So, for a family of four, this is for people making -- a family making between 20,000 and about a little over 40,000.

We're in climate zone 10, and so it is about 20 miles inland from the coast. And Poway can be quite warm eight, nine months a year. And it's under construction for delivery in early next year.

We're using photovoltaic to provide approximately 90 percent of electricity, both common areas, and units. It's 141 kilowatts. We're using short panels because we are, each of the units, as well as the common areas, are individually metered.

The panels are located both on the carports, as well as on the flat roofs. And so we'll be entering interconnection agreements for each array, for each unit, essentially, with SDG&E.

As I understand, this is the first affordable housing project in California to use

this high percentage of solar. And we also were the first development, affordable housing development in San Diego County to use the new zero utility allowances that were developed there. Such that we pay all utilities to provide our residents more ability to know what their monthly budget is.

We didn't only address supply, we did address demand. And this is just a quick thumbnail of a number of energy efficient systems that we have, including hydronic heating, central gas-fired tankless boilers; of course, EnergyStar windows and appliances. And all of our recent projects have been EnergyStar and energy efficient. They just have not provided photovoltaic.

We exceeded Title 24 in their requirements for air conditioning, which requires 13 SEER. We were at 14, 14.5 SEER. We do have pin fluorescent in all interior and exterior applications except where the local requirements are for low sodium lighting. That's very common in parts of southern California to assist the Palomar Observatory.

This is a good measure. We actually

went into building department under the 2001 Title 24. Estimates by energy consultants are that we exceeded that by 42 percent. And under the new Title 24 we exceed by approximately 15 percent.

I think the most amazing part of this is that this is the first photovoltaic project for us, as well as most of my design and my construction team.

The Community Housing Works, in conjunction with the City of Poway, who was our partner on this, basically approached it with a decision first that we would each wanted to do photovoltaic. And we just kind of went from there and tried to figure out how we could do it and how we could afford to finance this.

Affordable housing is smart growth because it allows people to live and work in the same communities, and to avoid costly, both in time and in energy consumption, of commutes.

We looked at why did we use solar. Because it was the right thing to do. Because it would reduce electricity expenses. It's part of renewable, helping the energy constraints. And, as I said, also in conjunction with our zero utility allowance having tenant household budgets

have some certainty.

Our consultant on this was Global Green USA. They were involved early during site planning and the design. But then they proceeded to work with us as they were awarded a Energy Commission grant from PIER funds to work with us to establish a replicable model. And I can tell you your money has been very well spent; they've been spectacular.

I've been working with them for a year and half and a year and a half ago I just could say solar and I knew what photovoltaic was. and I know very little yet, but at least some of the terminology is beginning to sink in.

We're also part of SDG&E's sustainable communities program. Just briefly, we've also done a number of other sustainable elements in this development including water conservation. We have no mown grass; we have native plants. I put in a citrus grove so that we have a food demonstration in the middle. We're using things like double-flush toilets. We are adjacent to a greenbelt floodway and our site water is treated and released to the adjacent greenbelt floodway.

I have site work art integrated into the

design. And, of course, as in all of our developments we have a learning community and a computer room. This is the pretty picture. This is the artist's rendering, looking at really the back of the development from the vantage point of single family homes across the floodway.

The reason it was done this way was because during the entitlement period the single family homes didn't want those people. But we were able to indicate that it was a very well designed development and would not lower their property values.

Project finance briefly, and I know Ramon Mendez this afternoon will go more into this case study, but basically without land this development costs a little over $16 million. That's really just the reality of construction costs.

If I put land in, it would be about 18-5. Land, by the way, was donated, in essence. We have a 99-year ground lease with the City of Poway, but the land costs are $1 million an acre, essentially.

This is a very simple sources project. We have very few sources as affordable housing

goes. We have what's called a soft loan -- and Ramon can explain that more this afternoon, or we can answer questions -- with the City of Poway. $1 million from the County of San Diego federal home funds.

The loan that our rents can support is only about 2.4 million. We have, in fact, just received recently our reservation from the Energy Commission renewable program of a little over $400,000, which offsets the costs of the million-plus solar.

We had to defer some of our developer fee when construction costs came in astronomically beyond the box that we thought we were estimating. And then, of course, the big dog here is the tax credits, the loan from housing tax credits, which, of course, awarded through TCAC; and also we have business tax credits, which is a federal program, equity investors NEF.

Ramon will go into this more this afternoon, but again, we're paying for the capital costs of solar through the energy rebate. Through the boost that we get in tax credits because of putting in solar. Because of the federal business tax credits, and I say they expire in '07.

Actually they don't expire, they go back down from 30 percent to 10 percent.

And then we also, because we're using zero utility allowance, that allows us to charge the full amount of rent as opposed to reducing it for utilities. And so we have some additional loan.

This is a pretty picture. This was taken last week as we're in framing.

Why don't affordable housing developers use solar? And, again, this is our perspective from knowing our community of the affordable housing developers in San Diego and somewhat throughout the state.

First is it's really unknown; that there's all these questions, technical, how do you do it, who to trust, what kind of panels are there, who makes them. Finance, where do we get the money. Entitlements, entitlements are a long and costly process. And they become more complicated potentially because if you're putting in a more complicated system.

Construction, more complicated; potential delays. Utilities, getting your meter hook-ups; getting everything done; possibly more

complicated and delays.

And as Ramon, I think, is going to tell you this afternoon, time is our worst energy on affordable. Unlike other commercial development, and I worked for 15 years in the commercial development area on the market side, we lose more when we're late than just having additional construction interest and losing rent. We also potentially lose equity.

On this project, every month that I come in late I will lose $100,000 of equity, and have no chance of recovering. So, I'm watching the clock every day.

Developers don't use solar because the assumption that it's too costly. System costs, construction upgrades, there's hidden costs of this. For example, I had to upgrade the carports to at least $100,000 to make them structurally sound to support the weight of the panels compared to what a normal carport would be.

There's also additional soft cost, design, permitting and consulting. And,a gain, we just talked about construction delays.

Another reason is it's a complex, once you get into the operation as we talked about

earlier, we not only develop, we own this development. We own it forever. We have a 99-year ground lease on this project, and we have deed restrictions for 55 years to keep it for no matter who owns it for 55 years.

So, the question is maintenance. What do you do with the solar panels. Who services them. Replacements, are they going to really last. This is a big hit if this doesn't make it for the 25-year expected useful life.

Operating costs is an extremely important issue because there is -- we can't raise the rent. If costs go up, we have no other source of operating income essentially. And in some areas HUD rents -- rather HUD incomes have actually gone down. And that means that rents would require to go down even as just normal operating expenses of any real estate project continue to go up.

And lastly, of course, solar is sometimes just below the radar. And in this monopoly game of trying to identify projects, get them penciled, go through your entitlements, deal with NIMBYs, what's happening across the board with construction costs, very complicated

financing, et cetera. These are all reasons that it's easier sometimes for developers just not to look at one more issue.

We talked about complex financing, by the way. I think we beat the five to 12 sources. One of our previous developments had 13 different sources of income. So, that was quite a challenge. All right.

So what will it take affordable housing developers to begin using solar, from my perspective. First thing is successful examples. Success stories from known colleagues in the industry. I've had two major, I believe, national affordable housing developers, and one for-profit developer approach me in the last several months and just say in a mystified way, I don't know how you're doing this. We've looked and looked and we just couldn't figure out. You're using 90 percent photovoltaic. We don't know how you can do that.

Basically all eyes are on us. And as I know we will succeed in this development. It's going to give a lot of encouragement, certainly in the San Diego community, but beyond.

Second, affordable housing developers need education and technical assistance. Now, I

realize a lot of it's out there, but we don't speak the same language. It's taken me a year and a half and lots of hand-holding by Global Green USA, as well as others, to get me to at least be able to understand that there are two different agencies that have two different programs and why one program works, et cetera, et cetera.

So, there's a lot of different language and I really applaud your efforts here to have this nexus.

More outreach obviously to affordable housing, which you're doing today. But, these last two things I think are really important because they seem to be overlooked in some of the discussions.

One is the specific education of the local governments, the building departments, the planning departments and the fire departments. We worked closely with the development services department of Poway. And they were quite committed to this development. And we went from site plan to construction in 11 months, which is pretty amazing by anyone's measure.

But in that process we actually worked with the fire department, for example, in writing

their first guidelines, because they had never done multifamily solar. And they didn't know what they were going to do with all of these panels.

Planning. In many cities like the certain look, but we also have to hid the panels. They don't want to see them. They have to be flat, on a parapet. And there are certain kinds of design that would not have been acceptable for local architectural vernacular. So that's another thing that makes solar beautiful.

Building departments, just how everything interrelates. You have another whole set of plans essentially. Local utilities, and ours is SDG&E. It would be extremely helpful to encourage use of solar in affordable housing if developments which are using that, get some preference in the planning and processing.

And, you know, we can go into war stories where you kind of get in line. I'm in the sustainable communities program with SDG&E; it didn't help me at all in the planning. And, in fact, our utility plans went in on time and came out late and cost some more money out of the project contingency.

State agency coordination. Again, I

applaud you for this effort today; continued coordination with the alphabet soup here, TCAC, CDLAC, HCD and Cal-HFA.

Exert any influence with manufacturers. If there is any way that affordable housing can, deliveries of panels are on time. A late delivery on my project would be just a disaster. And late deliveries could financially ruin a project.

Again, because you not only have additional construction interest, and you're not up and running. And so you don't have operating income. But you're losing actual equity. Ramon can talk more this afternoon about this magic placed-in-service date where if I miss one date, if I get my certificate of occupancy on May 1st versus April 30th, I lose a whole month of equity.

Funding for capital costs. Of course, there's a lot of attention on this. From our point of view rebates work best. I really don't know that I would have been able to pencil this with 90 percent solar without the KETCH's rebate. I just don't know that that would have worked, particularly when construction costs are rising astronomically.

The certainty of reservation. Lenders

need this. Technically my project was actually out of balance with my lender, who's Union Bank, because until I received the reservation about less than a month ago, I technically was $400,000 short on a source.

I know there's already been attention to the length of the reservation; 24, I'd even suggest 30 months. The average construction period is 18 months. But last year I did a development, a large, 180-unit development, and it went a full 24 months because we had some construction delays before I sort of got there. And we had the third wettest year on record, et cetera, et cetera.

Quick processing of rebates. Again, lenders and investors were on pins and needles. And I kept assuring them and Global Green and folks kept assuring me, don't worry, you're going to -- KETCH rebates are coming in. But my lenders and investors were nervous until I got that reservation letter.

One area I'd like to put on the table is something I've already raised last October with SDG&E. And I call it pool billing. Maybe it's called a pool tariff might be the correct wording.

We have individual meters for each of the units and for the common areas. And we believe, as an organization, that that's actually a good thing because that will show usage. And when people know what they're using they, perhaps, will help to conserve more.

But the discrete billing of having 50-some, or I think it's 63 separate interconnection agreements with SDG&E means that at the end of the year, if, for example, half of my tenants were extremely energy efficient and conserved, at the end of the year I don't get money back under the system. My bill goes to zero. So, that's good.

But let's say the other half used it, used more than what I'm estimating. I pay for them. If I could pool the tariff or pool the billing for the whole complex, that's one small area that would mean a lot in being able to assure that my operating costs do not get out of line.

As I said, I did meet with SDG&E's standards group in October and I know they're looking at it. They suggested that perhaps that's something that the PUC in their -- I'm not sure if this rulemaking number is one you'll be addressing.

And in sort of a closing, I again appreciate having real developers here because I think that we're the real litmus test of what will work. And I applaud your efforts today. And it's an excellent, excellent opportunity. And this is our photo. Thank you.

COMMISSIONER GRUENEICH: I just have a couple real quick questions. Your handout said that this was the first solar affordable housing project in California. Are there any others elsewhere in the country?

MS. JAGODZINSKI: I don't know; perhaps Global Green has better. I'm told that we're possibly the first using this much across the country, but I don't know that for sure.

COMMISSIONER GRUENEICH: And did you say that your estimate at the direct cost of the photovoltaics, not the indirect like doing the carport, but the direct cost was about a million dollars?

MS. JAGODZINSKI: Yeah, it's a little over a million.

COMMISSIONER GRUENEICH: And do you know the energy output in terms of megawatts --

MS. JAGODZINSKI: We're 141 kilowatts.

That's as much as I know.

CHAIRPERSON PFANNENSTIEL: Thanks very much. That was fascinating.

Nancy Conk from Community Housing Opportunities Corporation.

MS. CONK: Good morning, I'm Nancy Conk, Executive Director of Community Housing Opportunities Corporation. You won't have any handouts or a PowerPoint this morning. I was invited to participate just as I was leaving on vacation, and returned last night. So, I hope you'll bear with me and --

CHAIRPERSON PFANNENSTIEL: Well, thank you for making time to come here and talk to us.

MS. CONK: I'm more than happy to. And I'm just delighted that you're having this hearing. And I participated in the other recent hearings about how to promote solar use in affordable housing. I just think it's such an important area. So I appreciate your making time for this.

I have to say that much of what I wanted to address Mary Jane has done a terrific job on. What I would like to emphasize, as an affordable housing developer with an organizational mission

to use public resources in a responsible way, we have been trying to do energy efficient developments for quite awhile, and face numerous challenges, on top of what are the normal challenges that any affordable housing developer has.

And basically we look at three things as our expectations in our developments. First we have to look at feasibility. Can we raise enough money to cover all of our costs. What is the predictability factor, because as Mary Jane spoke to very well, time is of the essence. And eliminating variables and unpredictable element. Will a resource or product, a building project, be available when you need it, is very critical.

And then sustainability over time. When we're using innovative or new building materials or designs, how is that going to play out over the life of the project. And we're in this in perpetuity. We're not just going to build these and ten years down the road, if it's not playing out, sell it to someone else.

Let me give you a little bit more background, too, on my organization, the organization I'm Executive Director of. We're

based in Davis. We've developed about 1300 multifamily units. We have a small single family development history, as well, about 7500 units. But primarily multifamily.

We're active in Yolo, Sacramento and Solano Counties. And right now we're really focused here in Sacramento on a project that's going to be the most ambitious one that we've done from a green building perspective.

It's a 44-unit project on an infill site on Florin Road. It will also have a small commercial component, about 5000 square feet of commercial and about 37,000 square feet of residential.

We're using a number of, you know, green building elements to this, not just solar. Our goal is actually to create a building that will be primarily cooled by night ventilation. Only the most exposed units on the western side of the project will have conventional air conditioning units. So that's probably the most bold and daring part of the project.

But we also are incorporating solar into our project. And I think I actually have some very, you know, positive news so far on this.

We're in a much earlier stage than Community Housing Works' Solara project. We're still in the design stages.

But at this point it looks like the additional cost to our project for the hard costs, the solar installation, will be about $500,000. We've been working with SMUD and we have identified, at this point, about $425,000 in rebates and credits and business investment credit for the project.

So, at this point in time on the hard cost side it looks like we really only have about a $75,000 additional cost to the project that hasn't been offset by the various programs that are now available.

SMUD's zero energy housing program, they've given us a bit of a bonus on that rather than 2-and-a-quarter a kilowatt hour, it's going to be 375, so that increase really is meaningful for us. So, we're pretty excited about how feasible, at this point, the solar component in this project will be.

On top of that we also have additional soft costs, consultant costs that we've needed to incur in the design of the project. And so far

it's about $25,000. Our project was one of the early ones selected by the Enterprise Foundation as part of its green communities initiatives. And so they've provided some grant assistance; not enough to offset the full 25,000, but a good portion of it.

So, from the feasibility perspective, and looking just at solar, we're quite excited about the progress that we've made.

The other aspect of feasibility, of course, is demonstrating to our lenders and investors that over time this project will continue to be feasible. And so the next challenge that we're looking at is how we're going to be documenting the energy use. And that's not just doing it upfront so that our lenders and investors will have confidence that our 30-year pro forma are reasonable.

But, of course, it's also looking at how we will continue to document it annually. And we're still working on that. I don't think we have any final solutions, but what we're -- the status of our discussions right now with SMUD are that we will have individual meters for all of the units, but we will put the full solar array on a

single management house meter.

So 100 percent of our common area costs will be covered, but obviously the array will provide a lot more benefit than what we need just for the common areas.

And so we're working with them on a way to then provide credit back to the residents so that they're also receiving the benefit of the reduced energy consumption.

But, again, as I say, we're still kind of early in the process so I don't have more specifics for you at this point in time.

You know, the other issue around predictability is this question of whether the rebates that are available when we are building our initial development cost source and use assumptions, whether they will be available.

I want to echo Mary Jane's recommendation that the cycles that those rebates are available for, that it needs to be extended for at least two years and possibly three because there are so many unpredictable elements during the course of the development cycle. A project that you think should take two years could take four to five.

The other challenge that we're having is around working with the determination of the utility allowances. We're being pretty conservative at this point as to how much we think we'll actually be able to save through the use of solar and other energy efficient design elements. I think right now we're looking at maybe a 10 to 15 percent reduction.

But most housing authorities really only monitor the usage, the utility usage within the housing that they own. They don't go out into the marketplace. So if you have a housing authority that has never done any kind of energy efficient design, and that probably speaks to most if not all of the housing authorities in the state, they really don't have a reference point, a database to go back to. And if you ask them to do those calculations for your benefit, you know, they really just don't have those resources.

There are a couple of approaches out there. One is to ask the key funding financing sources, the tax credit committee, the Department of Housing and Community Development, to look at allowing schedules other than the local housing authorities utility allowances, developing a new

model for energy efficient affordable housing projects.

I'm not sure how far along that is, but I think there's real benefit in that. Because certainly in some of the smaller communities where the housing authorities have even less resources, the ability to help them modify their current protocols can be pretty challenging.

The other possibility, and I think that we all need to work on this, as well, is looking at whether there are models that our consultants and the utilities can develop that would show a local housing authority how they could appropriately adjust their local schedules so that it wouldn't necessarily be the housing authority that has to engage a consultant to review allowances on an annual basis; and perhaps just one project in their jurisdiction. But if there was a methodology that could be provided to them, I think that that would be beneficial on both sides.

I also want to speak to the issue of the need for technical assistance. We're working with a very sophisticated general contractor who has done a lot of green building in other states. So

they have a fair amount of experience, but they know that the subcontractors that they are working with in this region have little to no experience.

And they keep advising us that that's going to end up being reflected in the bids that we get from the subcontractors who will actually have to do the installation. If it's an unknown, they increase their contingency or their overhead factor.

And so really, having practical educational and technical assistance opportunities, whether it's having people from the manufacturers or the Commission or from the local utilities really working with the general and with the subs early on, so that the contractors will understand what it is they're going to be expected to do. The more that that can be addressed before they get out in the field the better. So I think there's a real need for technical assistance in that arena.

It's also true for building departments, when they're presented with a set of plans for something that's designed in a way they've never seen before, you know, one, it can delay the process; two, they can ask for changes that may

not be in the best interests of the project, but they're trying to bring it back to something that's known and understood. And they're confident that it's within the building codes.

So, building departments need a lot more coaching and training in this arena, as well.

I think it's also important that the local -- where there's local financing involved, as well, that those agencies meet early on and that we really start promoting partnerships between the utilities and the local financing agencies.

If the utilities can be at the table with the, you know, the financial assistance staff from the city or the county that you're working with when you first present your project, or when any developer presents their project, that's an opportunity for the developer to be educated, the architect to be educated, and for you to start getting some sense of what both the cost and presumably the additional sources of credits that might be available to help offset the additional impacts from the solar energy incorporation in the project. I think that would be particularly valuable. The earlier in the process, the better.

I think the last thing I'd just like to say is Linda said earlier keep it simple in terms of how the assistance is provided. You know, we're oftentimes finding that we're talking across when we're talking with the consultants that are working ont he energy efficiency designs for our projects.

So, one, we have to be able to understand each other. Two, affordable housing developers are dealing with so many restrictions on what they can include in their project as eligible basis and, you know, and getting a basis boost is great. I mentioned that to someone recently and they thought maybe it was a competitor with Red Bull, that it was an energy drink. But, no, it's something that can generate equity for a project.

You know, we do have to keep the programs simple and the most fundamental piece in all of this is that affordable housing, the main way that we differ in terms of our development strategies, beyond obviously serving those with the least financial means, as our tenants. The main difference is it costs what it costs the for-profit developer to build. We just can't have

debt. The closer we get to zero debt on our projects, the better.

So whatever mechanisms are used by the Commission or other resources to promote the use of solar in our projects, it really has to be grants or understood that if it's a loan, it will likely never be repaid. Zero interest, 55 years, no AM, that sounds like it might work.

And then I think the last thing I want to say is that within the affordable housing community, and particularly the nonprofit affordable housing community, you have a strong bunch of allies. I think virtually every nonprofit that I know in this state has within its mission statement a statement that we want to do environmentally friendly design. We've been looking to do this a long time. We're so happy you want us as your partners. Thank you.

CHAIRPERSON PFANNENSTIEL: Thank you so much. Mary Luevano from Global Green.

(Pause.)

MS. LUEVANO: Good morning, almost afternoon. I know we're running a little bit behind so I'll talk fast. And I hopefully won't repeat anything that all of my colleagues have

said before me.

My name's Mary Luevano; I'm the Policy and Legislative Affairs Director for Global Green USA. And I just want to say, first of all, thank you to the Commissioners and staff who worked very hard to put this workshop together. It's an issue that we have worked on and cared about for a very long time now. And we're just thrilled to see this actually, this dialogue moving forward and all of these good things happening.

And I just wanted to address Commissioner Grueneich's question previously about solar and affordable housing, because although Solara is not the first to put solar up, they are the first, I believe they'll be one of the first zero energy affordable housing projects. So that's something to be noticed and congratulated.

Global Green is slow on the uptake here with the PowerPoint. We're an environmental nonprofit. We're based in Los Angeles. We're national, and the international arm of an organization called Green Cross. And one of our key program areas is green affordable housing.

We've been working on this for about ten years or more. Started as a result of a

partnership with Habitat for Humanity. And the idea was to reduce resource consumption and foster sustainable communities by encouraging the design, construction, rehab and maintenance of resource-efficient affordable housing.

And there are lots of good reasons for doing that, many of which you know. These are a couple of examples of green affordable housing projects, all in California.

I'll get right to our expectations as an organization. Our first is that affordable housing should be safe, healthy and economical for its residents. Since utilities are often one of the most significant costs or expenses, an effort should be made to reduce those costs.

And also from the environmental perspective we believe it's important to utilize clean, renewable energy resources from a global perspective. I mean we're talking a lot about money and savings, but from the bigger perspective climate change and reducing the impacts of climate change are a critical part of our mission.

Our vision is to create zero energy affordable housing throughout California and eventually nationally, and to conquer the world.

We think it makes sense again for a lot of reasons.

We started trying to implement our vision with a legislative strategy, I guess it's almost four years ago now, when million solar roofs was introduced successively in the legislative session in 2003, '04 and '05. We began talking with folks in the Capitol about the need to address the concerns specifically about affordable housing.

And ultimately that resulted in the 10 percent set-aside that we've heard talked about today in the legislation that, at the time we weren't sure how that would be defined or what kind of mechanism it would be. But we knew that there needed to be some special attention paid.

Subsequently, legislation was introduced as stand-alone, first by Assemblyman Wiggins and then in the two years following that by Assemblyman Pavley, to create a low-interest, long-term loan program. And to go directly to what Nancy just mentioned, and what Ramon and others have mentioned, free money and obviously a loan that looks like a grant, is what we've heard works the best.

There are also some specifics that we can get into at a later date about how that can be structured. And there's probably some dialogue that needs to go on about whether a loan actually works or doesn't.

Challenges in the Legislature. We're distinguishing the need for stand-alone legislation. And I emphasize this because even though we all, in this room, believe the need to address solar in affordable housing is important, even with AB-58 and the set-aside or the higher rebate, there were still questions when we went back about why we needed to treat affordable housing differently. And I think you've heard today a lot, and you'll hear more a lot about why that's necessary.

So building the case for the need was important. And developing arguments for why it should get special treatment.

The coalition that worked, and that supports this and continues to support this, some of these folks are here, included the solar industry, the California Solar Industry Association, and the ASPV, the Americans for Solar Power group, have all -- have made this a core

component of their push for a ten-year solar program.

Affordable housing trade groups, nonprofit housing in northern California, southern California's Association of Nonprofit Housing, and Western Center Housing California, and a host of others have also been supportive, as well as sort of your standard environmental organizations.

Why alone? Again, it's difficult for affordable housing developers to find ways to finance solar for more than just common areas. That's what we've seen. The Energy Commission program has typically financed solar in common areas, lighting, kitchen -- or community rooms and that kind of thing.

The higher level of rebates are good. But we recognize the need for gap financing. So to cover the costs that go from what is provided by the rebate and various incentives, to finance the full installation of a solar array that will meet all of the electrical demands of the units.

Again, as you've heard, developers do not want to take on additional debt. And private sector lenders have not been typically accustomed to financing solar. We're seeing that change a

bit. And particularly, in my next slide, times have changed, in the new construction areas where you've heard now that there are lenders that understand that the payback works.

That's, I think, probably a little bit more common in the new construction area, as opposed to acquisition rehab or retrofit. So that may be an issue that needs to be addressed with respect to those two areas.

And, of course, solar technology is becoming more common and people are just more familiar with it. So things have changed since, you know, we began talking about this four years ago.

In terms of the California Solar Initiative, the goals that we have helped -- that we have identified with the help of this coalition of groups, and again, primarily with input from those developers and the trade associations, are the development of an appropriate financing mechanism to get net zero projects. Not to just put up a little bit of solar, but to do net zero projects, insuring that there is the maximum number of incentives available. So being able to use the rebate or the higher level of rebate,

including in addition to tax credits, the basis boost, and the TCAC regs, and a loan, if that's necessary.

Flexibility in metering, and the ability to net meter are critical, insuring healthy incentives for energy efficiency. Unfortunately, you guys have done a great job with the solar program, we need more work in the affordable housing area on energy efficiency program. And creating user-friendly programs that are simple, straightforward.

And then I think the last element is critical. We're not going to -- I know that there is going to be bigger discussion about marketing and outreach, but we feel very strongly that there needs to be marketing and outreach efforts to the affordable housing community that is different than the rest of the customers, the potential customers of the California Solar Initiative.

And that's it.

CHAIRPERSON PFANNENSTIEL: Thank you very much. I have a couple questions, I think, for all three panelists. And I know it's running -- we're running a little late, but, you know, we so much appreciate your being here and

providing us with expertise and perspective, that we want to take advantage of it a bit, if we may.

My first question really gets to something Nancy just said -- Mary just said, I'm sorry, about the need to bring energy efficiency to a place where PV is now seemingly brought in.

Both of the programs, the PUC's program and the Energy Commission's program, is going to require levels of energy efficiency that exceed what is currently the building standards. And clearly that should be a prerequisite really for any public money being spent on these programs.

Is that seen as being a really valuable investment on the part of the developers? Is the investment in energy efficiency seen as something stand-alone, separate from solar? Does it only make sense when it's tied to solar? How do you look at that?

MS. JAGODZINSKI: We looked at it as going hand-in-glove. And it's a good thing by itself, and it's an even better thing combined with solar. I think in your vernacular you call it loading order, is that the right --

CHAIRPERSON PFANNENSTIEL: Yes.

MS. JAGODZINSKI: And so it's expensive,

though. It is expensive. And we stretched, and I wish we could have even done more. We could have done better insulation but it would have totally changed our -- we did good insulation, please don't misunderstand, but the price to go to that marginal difference was astronomical because it would have required an entirely different framing system.

CHAIRPERSON PFANNENSTIEL: I see.

MS. JAGODZINSKI: So, but, again I think outreach, as well. I didn't touch on it at length, but with the architects and the general contracting community perhaps will also incite some creativity of how that can be stepped up.

MS. CONK: I would say that we certainly are looking at what the impacts are from the step up in the Title 24 requirements. I agree that there are some appreciable costs. Whether we're seeing other benefits over time in terms of reduced energy consumption, whether that is going to have any offsetting benefit, we're still doing analysis. So we haven't drawn any conclusions there.

But I think the main point for us, as a developer, and we not only continue to own our

properties, we also manage. We're the property manager for all of the multifamily housing that we develop. We're really looking on even a more global perspective of how do we control the operating costs for our projects.

And to reduce what has been a very dynamic variable, energy costs, is certainly something that is important to us. And we see that as being critical to the long-term sustainability of our projects.

We actually have gone through a few years in Yolo County, it wasn't in Sacramento County, but in Yolo County out of the past five years we've had, I think, four years where there was no increase in the median income for the County.

So that meant that the rents that could be charged did not increase. But that was during the period of the energy crisis. So we actually had years where the utility allowances were increased beyond what, you know, any cost of living rent increase could have been. So we had to reduce the rents while we had increased costs to the project.

So if through more energy efficiency

design we can mitigate or eliminate the exposure to that kind of circumstance again in the future it would be very valuable to us.

CHAIRPERSON PFANNENSTIEL: Do you have a comment, Mary?

MS. LUEVANO: The only thing I would add is clearly energy efficiency is important and a high priority. It's just the cost that provides a challenge.

And in our sort of back-of-the-envelope assessment, the energy efficiency rebates that are administered by the utilities just don't provide enough per unit to make it cost effective, so.

CHAIRPERSON PFANNENSTIEL: That's interesting, because our analysis, I think, generally would say that energy efficiency is the most cost effective investment you can make. And that once you do that, then solar becomes that much more cost effective, or PV.

And so I think a lot of it does turn on the amount of the rebate, and where you can get your funding sources. That's important information for us.

Commissioner Grueneich.

COMMISSIONER GRUENEICH: Yes. Just one

factual question. Nancy, was the project that you were describing, was that multifamily? I was assuming it was.

MS. CONK: Yes, it is. It's affordable rental.

COMMISSIONER GRUENEICH: Okay. On the energy efficiency area, I'm also the assigned Commissioner at the PUC on energy efficiency, so I pick up both low income energy efficiency and general energy efficiency.

And at least for the low income programs that are funded by charges that the investor-owned utilities have available, what we try to do is to have the majority of those programs available at no cost to the low income community.

But the majority of our efforts are in the retrofit area. We are embarking upon really looking at overall what should be the investor-owned utility efforts in the low-income, energy efficiency community.

And so I'm thinking the input I'm hearing today will be very useful for us to have. So I'd encourage you, at a break, to make sure anybody who's interested, not just this panel, but who may not have been involved in providing input

to the PUC as we're structuring our low-income, energy efficiency programs, to please be in touch with Sarita or with Kelly so we can make sure you're aware of what we're doing, and get your input.

The other thing that just came to mind, only a comment, is that in the arcane world of how we have our world going at the PUC and how Commissioner Pfannenstiel has the world going at the Energy Commission, because it is rates overseen by the PUC that funds the investor-owned utility activities, typically what would happen is that really only the portion of the affordable housing program that's encompassed within what is the PUC portion of the program would have significant utility involvement and assistance.

And the portion that's funded by the Energy Commission funds would typically not, because that's not part of what would be the PUC's program, if I can sort of make it sensible to folks out there.

And yet what I'm hearing today is because there is such a need for assistance, and because the utilities, especially in multifamily, I'm assuming, play such a strong role when you're

thinking about how you're combining with any rebates that you may be getting on the energy efficiency, when you're thinking about getting technical assistance and going to the planning departments or other departments, that the investor-owned utilities' role is something that you'd like to see a lot of.

So I guess I'm saying that I'm taking back from this that we may not have had -- we've got to -- if our goal is to the public to be providing assistance in streamlining and making this seamless, we're going to think about how we're going to have and fund any assistance in role by the investor-owned utilities.

And that's something that I literally hadn't thought of before hearing that today. So, I want to thank you.

CHAIRPERSON PFANNENSTIEL: Tim?

MR. TUTT: Yes, I had a couple of questions. Mary Jane, Nancy mentioned how much of the solar costs had been covered by various credits and sources. And you had a slide in your presentation that also listed that. Can you give an amount of how much has been covered by that?

MS. JAGODZINSKI: I think Ramon is going

to cover that, as well, this afternoon. But our costs a little over a million dollars, 400,000 from the KETCH emerging renewables program. I believe our basis boost was in the high 300s.

And truly the icing on the cake was during the process when Congress increased the business tax credit from 10 percent up to 30 percent, because that gave us about $200,000. And that made it worthwhile for our investor, National Equity Fund, to actually bid on that.

MR. TUTT: Thank you. I wanted to follow up a little bit on the utility role that Dian was talking about.

We've always expressed a desire to have a strong, significant, positive utility role in this solar program, both in new, the market rate and the affordable housing components. And so I was interested in your discussion of what happened with San Diego.

And, in fact, just as a normal kind of interconnection process, as I understood it, for larger developments or multifamily developments, it would go into a queue and there was no consideration at that time of what place in the queue you would be. And it actually delayed your

project a little bit, is that correct?

MS. JAGODZINSKI: That wasn't the interconnection. That was just our normal processing and planning. And we just were like everyone else, in the fact that on the other hand we were in the sustainable communities program, and it involved the head of that group from our earliest -- didn't matter because the planning group is the one that essentially has to approve your utility plan, essentially, so.

MR. TUTT: I see. So we do need to work on that --

MS. JAGODZINSKI: That would be a --

MR. TUTT: -- and figure out how we can --

MS. JAGODZINSKI: That would be a big incentive. That would really help, that would incent developers.

MR. TUTT: Finally, for all three, I guess, that have been involved in this, we talk a lot about solar photovoltaics in these projects. Did you consider solar water heating? And if you did, did you run into any issues in that regard?

MS. JAGODZINSKI: We didn't, but we do have existing older developments and ones -- in

fact, one we're looking at an acquisition now that has solar -- the older system solar water heating.

And just one plug. The acquisition and rehab, particularly in San Diego, as I believe Jane talked about the condo market just going crazy and prices going just phenomenal, it's one, just to be able to buy the project, let alone put money into significant energy rehab, is almost not possible.

But, so anything that can help, even if the older technologies, I believe, are money well spent.

MS. CONK: I know that our architect and general contractor did look at that. We have, at this point, are working with a hydroponic tankless water heating system, and not the solar. I don't know whether it was the additional amount of solar panels that we would have required, a design consideration or what. But it's not part of our current design.

CHAIRPERSON PFANNENSTIEL: Jeanne, did you have any questions?

MS. CLINTON: I have two questions, and I'll just pose both of them, and then maybe you can each give a short reply to the two.

First, there's been a lot of focus on how solar goes into new construction, so I'd like to single the question, too. So do you have a different view of the role or relevance of solar in existing affordable housing?

Secondly, if you had $25 million to spend in California, on energy sensible -- smart energy solutions for affordable housing, would you spend it on solar, or would you spend it on efficiency?

COMMISSIONER GRUENEICH: We promise this will never be used against you, okay?

(Laughter.)

MS. CONK: You know, I think I really have to defer to our consultants. At this point I don't know that I have enough of a sense of what the cost/benefit would be on retrofitting.

The most of what we've done on buildings that we have either acquired and rehab'd, or properties that we own, has been, you know, much more modest efforts. Window replacements and you know, energy efficient appliances and things of that sort. I don't know that I'm prepared to give you a meaningful response.

MS. CLINTON: What about existing versus

new, the relevance of solar?

MS. CONK: If all the costs were there, if all of the costs were comparable to what a more conventional remodel might be, then I think we -- there wouldn't be reason not to pursue it, but the problem has always been that it's much more costly than more conventional systems.

And when we're doing, you know, retrofit on an existing building, we're basically limited to the reserves that we've built up over time. We're not going out typically and getting new sources of financing. And we're not typically able to put new debt on an existing property unless we're doing a major restructuring or refinancing.

So it would have to be essentially, you know, grants or those loans we love, zero percent interest with payback, you know, whenever you get to it.

MS. LUEVANO: My guess would be also that the ability to upgrade energy efficiency in an existing building would play into whether or not it makes sense to do solar.

MS. CLINTON: But, I guess what -- are you answering the tradeoff question or are you

answering --

MS. LUEVANO: No, no, the --

MS. CLINTON: -- whether it's relevant to do so --

MS. LUEVANO: -- other, the first one. In existing versus new. I mean it's cost effective to do it, you're going to implement energy efficiency measures in a new building.

You know, if you have to go back to a retrofit, if it's not extensive, and you're not doing energy efficiency upgrades, that would argue against doing solar.

MS. CLINTON: Okay. And any comment from San Diego?

MS. JAGODZINSKI: It's very hard to do a lot of the retrofit in an acquisition and rehab or retrofit. And I don't think you're going to have the same nexus.

In new construction I think I can be held to tighter requirements of efficiency in exchange, or combined with solar. Because you can build it in. But when you're just trying to preserve affordability and keep a project from going condo and spending every dollar on the acquisition, you don't have as much money to do

some of the efficiency things.

But you might still be able, with the right incentives, to provide solar. I don't know. On the Miss America questionnaire of how do you -- the tradeoff, boy, that's a tough one. I'm not an energy expert.

They're obviously both extremely important. I know that emerging renewables, though, are clean and they're renewable. And that's a very important factor to encourage use of solar.

CHAIRPERSON PFANNENSTIEL: I want to thank the panelists, in fact the whole morning speakers. I think that we have gained a great deal from your willingness to be here and spend your time and educate us and get us started on this path. So, thank you very much.

We'll take an hour for lunch, and so we'll come back at 1:15. See you then.

(Whereupon, at 12:15 p.m., the Joint Workshop was adjourned, to reconvene at 1:15 p.m., this same day.)

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AFTERNOON SESSION

1:21 pp.m.

VICE CHAIRPERSON PFANNENSTIEL: Ready to go with our first afternoon panel. I'm going to start with Teresa Clarke from Affordable Housing Associates. Oh, we're switching. Sorry. Back to Ramon. Thank you.

MR. MENDEZ: I feel honored that I'm going to put everybody to sleep right after lunch with this presentation.

This is -- we decided to switch because the project, which is the Solara project, used all the bells and whistles in terms of all the financing mechanisms that are out there to make is feasible.

So, we're going to start with everything which is going to demonstrate the point of why we're asking you to keep it simple.

So the available financing mechanisms include tax credits, rebates and grants and loans. And in the tax credits there's two programs. There's the federal low income housing tax credit program, which here in California is run by the California tax credit allocation committee, TCAC.

And then there's the business tax credit which was made permanent, I think, in 2000. It was made permanent so we don't have to worry about it being sunsetted. However, we're in the period right now where it's -- I'm getting ahead of myself.

So, let me go back to housing tax credits. So TCAC's regulations encourages developers to incorporate distributive energy technologies, PV systems, in their projects. And they do that by allowing a 5 percent increase in the threshold basis, which I'm going to describe, show visually.

But basically the threshold basis caps the calculation of how many tax credits you can get for a project.

So, they're saying if you incorporate a PV system into your project, we let you increase that cap by 5 percent, and it generates more tax credits in your project.

And so since it generates more tax credits, it potentially also increases how much an investor, a tax credit investor, is willing to pay for your tax credits because you're generating more tax credits. So, in essence, you get more

money.

The project's eligible basis, which is the construction and construction-related costs, has to exceed the threshold basis limit in order for the 5 percent adjustment to create additional equity. Let me say that again, because it's a mouthful.

Actually, we can do it visually. On the right-hand side you have a project where the project cost, the eligible basis, is -- exceeds the cap, which is shown in the red line.

Now, if that developer says I'm going to incorporate a photovoltaic system, that cap goes up 5 percent and it generates more tax credits.

On the left-hand side you have a project where the costs are below. And by saying I'm going to commit to doing a PV system, it doesn't really get you that much more. So there's a limit to when it makes sense.

Now the business tax credit is something that's also run by the IRS. If your project is placing in service, and by placing in service it's just an IRS term that means that you got your certificate of occupancy or your temporary certificate of occupancy. It means your project

is ready to be occupied.

If your project is placing in service in the year 2006 or 2007, you can get a 30 percent tax credit on the cost of your photovoltaic system, net, depending on rebates.

Now, unless Bush extends this, which he may, because it'll be election time, it will go back down to a 10 percent tax credit.

So in the Solara project when we first started looking at how to finance the PV system, the bill had just been signed. It was part of the Hurricane Recovery Act. And all of a sudden it's like, oh, we just got more money all of a sudden. This is great. Okay.

But, as MJ was saying -- or Mary Jane was saying, is that if this project was late by one day, if it fell into the year 2008, January 1st of 2008 it was placed in service, that tax credit would go from 30 percent down to 10 percent, and also we have a financing feasibility gap. We're short on money.

Okay, so the business tax credit is available to businesses that an investor purchase qualified solar energy systems. It is a tax credit taken in the first year of operations, so

it's taken in the year that you actually place in service. It is only available on the portion of the cost that is not covered by rebates or grants.

So this is a big interplay between how you set up your money versus this business tax credit. So there's an exchange. And I'll walk you through some math in a little bit.

The business -- not only is there play between your grants or rebates and the business tax credit, but it also interacts with the low-income housing tax credit in that it has to be reduced from eligible basis, or how we calculate how much low-income housing tax credits we got.

So in this case the total eligible basis, which is the construction and construction-related costs was about $12.8 million. The business tax credit that was generated by this project was about $208,000. And in this case there's also some federal funds called home funds that we have to deduct from eligible basis. And we got a net eligible basis about $10.58 million. But our threshold basis limit was below that, which means that we're still okay in that we have our costs are above our threshold basis limit. So we're benefitting from this 5 percent boost.

Okay. The other benefit by the business tax credit is that it allows the owner of the PV system to accelerate the depreciation of the portion of the cost that is not covered by grants. What does that mean to you? Nothing much. What does it mean to the tax credit investor? It means they get more return. They get to speed up the depreciation of the project, and therefore they might be willing to put more money into the project.

And, again, it's available to businesses that invest or purchase qualified solar energy systems.

So, now that -- I just went through sort of all the mechanisms, I'm going to walk you through some numbers to put it all together and hopefully make it clear.

Again, it's the Solara project. It's 141 kilowatt system. And if you recall from MJ's presentation, it was -- the list of funding sources was the Union Bank loan for like $2.4 million; the City of Poway loan; a County of San Diego loan; the 9 percent tax credits; and the business tax credits; and also the rebate from California Energy Commission, as well as grants.

Okay.

So how do we finance the PV system. I'm just going to focus on that part. We use the housing tax credits, low-income housing tax credits where we got the additional 5 percent threshold basis adjustor. We got the 30 percent tax credits and the accelerated depreciation on the cost not paid by rebates and grants.

We also were able to convince the conventional lender, in this case Union Bank, to say, hey, we're saving on utility allowances; we're actually going to be collecting higher rents. So you should lend us more money on that. And they got comfortable with it. It took awhile for them to get there.

The California Energy Commission rebate; and then also there was grants that funded Global Green, but we don't show those in the budget because it's essentially free money.

So here's how the numbers sort of shake out. Where there was the base cost of about $968,000 for the PV system; and then we have what's called the general contractor's stack, which includes -- and it's the asterisks down below -- general contractor's markup, because

they're the ones who contracted to the subcontractors to install it; insurance; the bonds, which is the insurance to make sure the project gets completed. And prevailing wage, because this project had a certain kind of money that required that the labor in the project get paid union-level wages.

And so the way we paid for it is that the housing tax credits, that additional 5 percent increment, generated about $405,000 of equity from the tax credit investor. The business tax credits, the 30 percent on the net cost, generated about $208,000. We leveraged about $82,000 of additional debt on our savings on the utility allowances on electricity. And, of course, the KETCH rebate of $409,000.

So essentially this project -- this system paid for itself on assembling all these funding sources. Doesn't happen all the time, but it does. In this case it did.

You were asking earlier about who's encouraging the developers to include photovoltaic systems. And in this case, this is the threshold basis calculation for TCAC, for how much tax credits you can get.

And if you look at the red underline it allows the developer to apply for an additional 5 percent boost; that was the 5 percent boost I was talking about. Okay. And if you look at the line above that, if you agree to do energy efficiency, they allow you to increase the amount of tax credits you get by 4 percent.

So, I think the point that was being made earlier that if you combine these two it sort of makes more sense. You can see that TCAC is the one that's really driving the boat here in terms of trying to get developers to include these systems in their projects.

So because we were able to increase our threshold basis number by about $383,000, the tax credit investor who is bidding on the housing tax credits, said, well, we're going to pay you $1.04 for every tax credit you deliver. So in this project that's how we got to about $405,000.

If you're trying to do the straight math of how to get there, you see the asterisks with all these but, you know, assumptions. I'm qualifying this, it's not easy to get -- to do the math simply, so. Those are the assumptions that were there. But ballpark is that the $382,000

generated about $405,000 of additional equity.

Now, the business tax credit is, again, we took the total cost of the PV system; and then we subtract out any grants or rebates. And in this case it was 409,000. And so we get our basis for business tax credit. And, again, as long as we place in service by 2007 we get 30 percent business tax credit.

And so I rounded it down just to make the numbers work, but that's how we got to about $280,000 of additional money.

An issue was that this is tax credit in affordable housing was new. And so we bid for low-income -- for the housing tax credits. We sent bids out to various investors. And we spelled out, hey, this project is incorporating PV system and we have this amount of projected business tax credits, tell us what you're willing to pay for it.

And the various responses was, well, we -- there was two investors who have official green programs, and their names have popped up today, which is the Enterprise Foundation and also the National Equity Fund. They both now have green programs.

And in one case the National Equity Fund said, well, we have no idea what these are worth, but we'll pay you $1 for each one. And so that's how we got $1. And not having done this before we're like, great, you know, couldn't ask for more. Or maybe could have, but we just don't know because it's a new market.

The other investor sort of said, well, we're going to just lump all the housing tax credits and business tax credits together and came up with a price. And there's really no way to distinguish how much they paid for it. But we assume that they were giving us a little bit more because we're delivering them a benefit that they were looking for. But I think they were trying to figure out the pricing, too.

Now, the challenge was that the other investor said, we have no idea what you're talking about and we're not going to even -- we're not going to even look at that in how we price what we're going to give you for the tax credits.

So part of our education of doing this presentation at the housing conferences on the statewide one and regional ones, is trying to get investors to realize this is out there. And

there's a market for tax credits. And, by the way, this is something good for you guys because you're buying and selling tax credits; this is just another type of tax credit. So, we're still in that learning curve with tax credit investors. Okay.

And similarly, so with the -- in the savings with the utility allowances, we were able to reduce the common area electricity to zero. The tenants' utility allowances for electricity were also reduced to zero. But there's an offset because we have to pay interconnection fee per unit per month of about $10. And you plug that into a calculator or Excel and you get how much additional debt you can buy.

When we first started looking at this project we were looking at a -- the model back then was that there was companies out there who can provide the loans for you, where they leverage that increment for the savings on the utility allowances, you know. They'll lend you money, and that savings that you're making is how they get paid back over time.

When that was first brought up on the conference calls, I was like, oh, God, not another

lender. Because we already have 13 lenders in the deal. So the point I wanted to make there is that how you structure your program, maybe you have an option for a loan program for when it makes sense. But if we can convince the big banks to provide the extra loan amount, then why complicate the deal even further.

So, again, we were able to leverage about an additional $82,000 of funds there. And they needed to, you know, they needed to think about it. They needed to think about the risk involved. What if it doesn't generate enough electricity; what is there isn't enough money to pay their debt service. But they got comfortable and hopefully they'll spread the word, as well.

And, again there's other -- and if the bank isn't willing, there are other companies out there that might be willing to do.

So, in summary, this is how we pay for it. And just one more quick story. The local public agency, when the budgets came in, as MJ said, the project came in way -- the consortium costs came in way more expensive than it was originally anticipated.

And the City's consultant first reaction

was, well, let's cut out the PV system; that's a million dollars right there. And this is how I started to create this chart. It's like, well, wait a second, it's paying for itself, you're not going to save yourself any money by cutting it out.

So, in creating a program if it could be self paid, or almost, you know, self sufficient, that would be great because people are always trying to cut costs. But how much you put into it is going to be a function that there's a lot of other types of money out there. And so you might want to look at how your rebates are being leveraged with other funds.

CHAIRPERSON PFANNENSTIEL: That was great. Are there questions now for Ramon, or should we continue on the panel; ask Teresa to speak now, and then maybe ask questions for both. Thank you.

(Pause.)

MS. CLARKE: Hi. My name is Teresa Clarke; I'm with Affordable Housing Associates, and we're a nonprofit based in Berkeley, California. And PG&E is our utility provider.

And most of our projects are urban

infill, and since 1995 new construction, most of them. And we've done about 600 units. And we have about 300 in the pipeline.

Our first solar PV system was on this roof here in downtown Oakland at our Oak Street Terrace Apartments. And it's right there you can see one of those public buildings. I'm not sure which one that is, in the distance.

And we covered almost every inch of our roof on this project. We have about a 6000 square foot lot, and it's built all the way up to zero lot line. And a roof, pretty much every square inch we covered with PV. And we were able to get a little over a 30 kilowatt system.

And that's Oak Street Terrace. It's across from the library, across from the Laney Museum. It's 39 studio apartments for low income seniors. And these were efficiency apartments, so early on in the project we hadn't committed to PV in the beginning. We were -- we wanted to do it because we knew about the tax credit program, you know, that they would allow a basis boost. But we didn't really know how it worked.

And as you can hear from Ramon's explanation it's very complicated. We had no idea

how much money we might get from that basis boost, if any. So we couldn't commit to it on our application, because if we committed to it and we couldn't do it, we could get penalized, you know, for not delivering on that.

So, we didn't -- this is a 9 percent tax credit deal. But early on in the project, because they were efficiency apartments, and we have -- one of our policies is to do centralized hydronic heating, to centralize the heating because of our low-income population, to keep a very efficient, low cost, gas boiler system. And so because the apartments were so small we were allowed to master-meter the whole building.

PG&E normally doesn't allow you to do that. They only allow you to do econo-meter or individual, you have to do individual meters for all the tenants.

So, in this case we were lucky in that way. Because first of all we have hardly any room on this site. As you can see, it's 39 apartments on a 6000 square foot lot in downtown Oakland.

And we completed that in 2004. And about half way through the project we decided to just jump in and do the solar. And we were able

to get out about 3500 square foot of roof area. And here's some of the technical information about the system.

And at the time we used the 22 cents a kilowatt hour to project our savings, and I believe that's probably gone up already. And the impetus for us to just jump in was because of the savings on the utility bill and the control of our, you know, energy production. It's really important because we are serving a very low income population and we -- you do want to keep the common utility bills and everything very low.

We do all the energy efficient measures. We always do the hundred percent fluorescent lighting. We're always looking for ways to reduce our utility bills. Doing high efficiency boilers, you know, the munchkin combined system, those kind of things.

So this was a way again to kind of get control over these rising energy costs, which was really important. And our savings has probably gone up. We actually have this information on Sun Edison's website. I think it basically tracks, you know, Sun Edison helped us finance this. They're kind of an energy company. I don't know

exactly too much about them.

But they were able to -- they wanted to help out and try to create a new model for financing these things. And so they helped us finance the gap that we were looking at.

So, in this case we got a PUC rebate. Our other projects that we're doing are all going to be KETCH rebates. The KETCH rebates are up to 30 kilowatt system, and the PUC's were 30 and above. So because the rebate for the PUC was so much higher, we squeaked out just over a 30 kilowatt system to get the PUC rebate.

And we were, at the time there wasn't as much competition with all the big folks that were in there. And then the next year we couldn't get a PUC on our next project because the big -- everyone had kind of found out about this program and were jumping in. And there wasn't anything left. So we had to go to the KETCH rebates.

So this one was unusual because, you know, we didn't get the -- it was after the fact so we have this great $5 a watt rebate. You can see our solar system costs about $10 a watt.

And that included the design by the Sun Light and Power out of Berkeley. They did all the

design work, really helped us out doing that part of it. And then our electrical engineer was cooperative in terms of, you know, incorporating the system into the panels and figuring out how that would work.

And so you can see the solar equity, Mark Garell of our office worked really hard with Sun Edison trying to figure out how to finance this thing, and came up with this, you know, this promissory note, very complicated. I don't know if we'll ever do it again, so I don't know if it's a good model.

But it could be the start of a model for doing -- if you're not using your low-income housing tax credit investor, you know, it's possible you could bring in a different investor for your solar system portion. And, you know, use all those rebates in a different manner.

But because now that we have like Enterprise and NEF doing kind of understanding it a little, now we can go to them and just, you know, piggyback this on them. So that's nice.

And what I did here is I did not put this under the general contractor's contract. I contracted directly with the Sun Light and Power,

so I didn't have to pay a lot of extra markup from the general, which helped with the system.

And we did pay prevailing wage, but it wasn't union wages. Because usually a lot of times the electrician that's on the job will be union, which is even higher than prevailing wage.

So this was the agreement we had with Sun Edison where after five years we would basically own the system. And they would get the depreciation and the business tax credit in those first five years.

And we also made a deal they were kind of responsible for the actual output. And we would pay them a certain amount. And then after that, when we own it, we'll get all the savings.

And these were just some of the questions that we, you know, really are more toward other developers thinking about it, you know, getting your bank to underwrite those savings, as Ramon has mentioned. How do you calculate that savings. And I think it would be good to have some better data on how to calculate the savings and to hand over to the lender, and then they'll be very confident that we are going to actually get that savings on our bill, on our

operating bill.

And then the low-income housing tax credit investor, and how are they going to price those tax benefits. Ramon touched on that. $1, $1.04, 98 cents? You know, we don't know what -- and that really fluctuates, that fluctuates all the time for the low-income housing tax credits that we get, so we can't necessarily depend on that extra equity.

We don't know exactly. I'm surprised Ramon was able to balance it so nicely, the columns exactly balancing out. I thought, it never happens. We're always kind of shifting it around and the uses over here changing, the sources are changing all the time until we finally, at the end, the accountant certifies it. Oh, that's what we ended up spending, hmm. We finally find out near the end.

So, who will monitor and maintain the system? Well, they're coming up with much easier monitoring systems now. We -- Sun Edison agreed to, we paid a little extra money to put in a monitoring system, a computerized monitoring system which goes up on the web.

And I just talked to Sunlight Power and

they said there's a new system that goes with the SunnyBoy converters that monitor our systems pretty cheaply, for about $2000. So the technology to monitor is coming around, and I think it's going to be more cost effective.

And then, you know, your building design and location. We are doing a lot of stuff on the, you know, inner city, downtown areas. And we don't have a lot of roof space. So we want to maximize it.

A lot of projects I don't think we could ever get to zero energy because -- on these downtown projects because there's just not enough roof space, you know, we have such high density. But every little bit helps. And we're looking to do other alternative things to try to bring that bill down.

So the other projects we're doing right now are in Berkeley and Oakland. And we're basically putting in PV in those two; but those are 4 percent tax credit with an NHP loan. And we are getting the extra basis boost like Ramon was describing.

The cost of the system has gone down a little bit. It seems like the PV panels has gone

down a little bit. And we are still projecting a $3.50 per watt rebate. And when it goes much lower than that, when we were -- we weren't sure, I guess for awhile there the affordable housing, there's an extra percentage that you get. And that's really helpful. Because right now the rebate's down to $2.80 if you're not affordable housing. In affordable housing you get up to about 3.50. So that's really helpful to have.

And then, you know, the cost of the PV systems is fluctuating because of this supply problem. There's so much demand right now that, you know, that's becoming a problem.

And in the beginning the manufacturer, I believe it was Sharp, they were willing to finance the rebate. So we assigned the rebate to them, and we didn't have to worry about, as the previous speaker talked about near the end you have a $400,000 gap. That rebate money hasn't come in and the banks get very nervous.

So, we're a little nervous about doing that ourselves, because we're going to have to commit our developer fee in case the rebate doesn't materialize. The lenders want us to, you know, back that up.

So that's a lot of money for us to risk since we do get such a small developer fee to support the organization. That's a little risky. And I don't think Sharp and a lot of manufacturers, they don't want to do the assignment any more as much as they used to be willing to. So that's going to be a challenge.

I think that's all the little factual information I need to give you for now.

CHAIRPERSON PFANNENSTIEL: Thank you very much. Are there questions for Teresa or Ramon from the dais? Tim.

MR. TUTT: Just one question for Ramon. You talked about the basis being reduced by the business tax credit. Actually the basis being reduced for the business tax credit by the rebate.

And I guess it was my understanding that if you had a taxable rebate that didn't happen. Are you a nontaxable entity, is that why that's the case? I may be wrong.

MR. MENDEZ: It has to be the net cost. Basically you can't get a tax credit on anything that's free. And that's why when a couple phone calls ago when we were talking about what form should the money be in, well, grants are

considered free money. But they have to flow through to the partnership, whereas a rebate for some reason is sort of never shows up inside the cost certification; therefore it never really flows through the partnership, so to speak. The partnership is the ownership entity of the project.

Sorry, it's sort of got into techo mumbo-jumbo here. But I don't think this is an appropriate forum, because we'll have to get attorneys and investors and how to really structure your rebate versus grant on how to protect the tax credits. But it's always the net cost. You can't get tax credits on something you didn't pay for.

CHAIRPERSON PFANNENSTIEL: You need to come up to the microphone please, and identify yourself, Bernadette -- Juliette.

MS. ANTHONY: I'm Juliette Anthony from CARE, Californians for Renewable Energy. If you're a 501(c)(3) how do you get tax credits? Because we were talking a lot about the difference in qualifying for a higher rebate if you couldn't take advantage of the tax credits. Do you have an outside entity that is taking care of -- that is

the third party that is getting the tax credits?

MR. MENDEZ: Yes. In the example that I talked about the investor who was buying the loan composing tax credits also purchased the business tax credits.

MS. ANTHONY: Well, but does he own the system?

MR. MENDEZ: No, no, he -- in my example, in the limited partnership, the owner -- the developer of the project is the general partner, and the tax credit investor is the limited partner. And that's the mechanism we have here in California that funnels the tax credits from a nonprofit entity to a for-profit entity, so that there's equity exchange into the project. That's my example.

MS. CLARKE: In our example on the first project we did, Oak Street, we did bring in a separate investor for-profit and they own the system for five years, and we have this agreement to buy back.

MS. ANTHONY: Yeah, I'm familiar with Sun Edison's model power purchase agreement. But then as nonprofits do you pay prevailing wage, is that why you pay prevailing wage?

MR. MENDEZ: Not because of the tax credits, no. It was because of other funding sources of the project that required --

MS. ANTHONY: That required --

MR. MENDEZ: -- the prevailing wage.

MS. ANTHONY: -- prevailing wage.

MR. MENDEZ: Right.

MS. ANTHONY: Okay, now could a municipality do this without the -- you must have a third party that comes in, in other words?

MR. MENDEZ: Yes, we do.

MS. ANTHONY: Okay, but the --

MR. MENDEZ: Actually by municipality you mean like a city or a county? Or by --

MS. ANTHONY: Yeah, like the City of Berkeley. If they wanted to put solar on their library.

MR. MENDEZ: You have to ask the City; I'm not sure.

MS. ANTHONY: Okay, thanks.

MR. COLLORD: Ramon, after 2007 is the value of the business tax credit to the investor the same as the low-income housing tax credit?

MR. MENDEZ: Well, the business tax credit --

MR. COLLORD: Or do we know or --

MR. MENDEZ: -- the business tax credit is taken in the first year. And then the five-year period that Teresa was talking about is the five-year depreciation schedule. So the business tax credit's taken in the first year. And right now it's 30 percent until the end of 2007. So any project that places in service by the end of 2007 will get a 30 percent -- a one-time tax credit at 30 percent. And then a five-year depreciation of the system.

After 2007 if it does not get extended, the 30 percent goes down to 10 percent, which means it's not worth that much anymore. In essence, you get less money from the investor which means now we have a gap.

MR. COLLORD: Okay. And then for both of your projects I was wondering if any of your lenders were skeptical about the value or cost effectiveness of investing in solar systems. And if so, how did you bring them around?

MS. CLARKE: Yeah, we spent a lot of time working on the savings model and getting backup from Sunlight Power and from various, you know, sources to, you know, prove to them, and --

you know, that it's real and that we are going to save money, and it does actually produce, you know; it's not pie-in-the-sky; these things work.

So we did spend a lot of time convincing with that.

MR. MENDEZ: Same thing with the National Equity Fund where the acquisitions person, the one who was our contact person, had to spend a lot of time on the phone with their national headquarters, and with MJ, the project manager, and trying to convince them and educating them. It was really all about education.

And it was once they got on board about it, what a great thing this was, that's when they kicked off a program.

MS. CLINTON: Just one clarification, Ramon.

MR. MENDEZ: Yes.

MS. CLINTON: And earlier this morning we heard about this use of the business tax credit for solar. So if I understand correctly these multifamily projects are considered businesses, and they're not treated under the residential tax credit, federal IRS tax credit? Which is very small and insignificant.

MR. MENDEZ: Yes.

MS. CLINTON: So you qualify this as a business and therefore you're not being subject to the residential tax credit?

MR. MENDEZ: That's correct. Right. Because it's a commercial business. It's a multifamily housing project, right.

CHAIRPERSON PFANNENSTIEL: Very good. Other questions?

Okay, let's move to Clare Bressani-Tanko, Local Initiatives Support Corporation.

MS. BRESSANI-TANKO: Good afternoon. So anyone who isn't really familiar with the affordable housing side of things, you're probably up there scratching your head thinking how are we going to do this.

And so far we've talked mostly about new construction. So I'm going to add another layer of confusion, and that's trying to make these systems work for existing housing, affordable housing.

But one thing that I'd like to just emphasize is great is that I think everyone is on point today. The presentations from this morning and so far this afternoon, I think we're all -- we

have the same voice, the same message, which doesn't add additional confusion to your decisionmaking, thankfully.

So, to start, my name is Clare Bressani-Tanko, and I'm with the Local Initiative Support Corporation. And what LISC is, is we're a national intermediary for community development work. We have 33 field offices around the country and I'm part of the Bay Area San Francisco Office.

Our work includes financing affordable housing, commercial and economic development projects. But in addition to actually providing the funding through low-interest loans and grants, we also have a huge mission to build capacity of the neighborhood groups that are receiving these funds, that is affordable housing developers, other neighborhood community development corporations or nonprofits.

Our work in the sustainability area started in 2002 as a result of our partners in affordable housing coming to us and saying that their energy bills were skyrocketing. In some cases 25 to 150 percent of what they had budgeted as a result of the California energy crisis.

So we became quick learners in all the

energy language and whatnot, and engaged in a partnership called energy action through the public goods funds through the CPUC.

So for four years we delivered a program for multifamily affordable housing for existing properties. We reached over 250 properties through technical assistance, energy audits, eventually rebates. And had a fairly good success rate. Learned a lot of lessons along the way which some of you have received in a report we published recently. And the last slide has our website; you can find that report on the website.

Since the time of our energy action program we've kind of broadened our perspective and branched out beyond energy efficiency to green building. We're currently in a partnership with Build It Green, with the Green Affordable Housing Coalition. And that whole mission is to really promote green building and affordable housing.

But our green work is not just on the new construction side. We really believe in kind of an equity issue with all this green and sustainability stuff. That is that existing housing stocks far outweigh the new construction projects that are coming online each year. So we

want to make sure that existing properties also have the same access to resources that new construction does.

So we're providing green technical assistance, the full range beyond just energy efficiency. But on the energy efficiency side we're continuing to work with existing properties through a partnership with HUD.

So, some of the lessons that we learned, I think on the new construction side, it's very similar. But, as you can kind of gather from the presentations, there's scarce financial resources for affordable housing. But particularly in the existing sites. A lot of the properties are older building; they have antiquated systems; they have over-burdened and untrained staff. Obviously layered bureaucratic processes.

If they want to do any significant rehab projects or even simple upgrades they could take a long time to actually budget for those projects. If something comes up like a boiler project or, you know, something on the energy efficiency side, that they have the opportunity to upgrade to something more energy efficient, they won't all necessarily do it, you know, just because they

need to. They have to kind of budget for those things and wait maybe a year or two until they have enough funds to do a project.

There's also problems finding reliable contractors to actually do the work. But, on the solar side, particularly, all these properties -- I should actually clarify. I'm speaking specifically about multifamily nonprofit developers and providers, who happen to be mission driven, as someone mentioned earlier today.

They're interested in leveraging the public's investment. I think everyone in the room can understand that, that public investment is already going into affordable housing statewide. And adding layers of, you know, solar and energy efficiency, these types of things, actually makes the product, the affordable housing, a better investment for all the public money going into it.

And, again, people have noted that the nonprofits are long-term owner/operators that are in the deals for many many years. And they're interested in lowering their energy costs.

So in our experience I personally know only a couple projects that are actually existing properties that have installed successfully solar

panels on their buildings. And those projects are just for common areas. I don't know of any existing property that's done it yet for tenant units.

I don't know of any properties taking advantage of the federal business tax credits. Nor do I know any that are doing the power purchase agreements for third-party owned systems. The majority of the existing properties are also not energy efficient, which I think is really really important; it kind of speaks to the question earlier about whether folks should be advocating solar or energy efficiency.

I don't think anyone in the field would go out on a limb and go for one or the other, because, you know, we might get beat up. But, I think that it's important to note that most people would say that it's a stupid investment to invest in something that is going to be sexy like solar, but is going to be put on an energy-guzzling building. That's just not going to be a good investment.

So, I think that most of the field would be happy to do both, if possible. The problem is that in existing properties you can't even do one

a lot of times in terms of energy efficiency, other than solar. Even energy efficiency is difficult.

The reasons are, some people have noted this before, the regulatory and technological issues with submetering and giving that benefit directly to the tenants, where, I think, most of the nonprofit developers would love it to go. The split incentive is an issue that comes up both in energy efficiency and in solar.

Lengthy approval processes for rebates, someone also mentioned that earlier. But on existing properties you also have the issue of limited reserves. You just don't have huge savings in these properties to pay for new projects like a solar addition.

You also, more than that, have existing debt. And the whole way that existing debt works is all those, say 13 funding sources that one of the projects used, once it becomes an active site, those 13 folks are not going to want to step lower on the rung of the ladder to get paid to make room for another financing structure that pays for say the solar system on the unit -- or on the property.

So you're going to have a lot of unhappy lenders. And most project managers don't want to touch that with a ten-foot pole.

And, again, since many of them are not energy efficient. It's getting better, but you have that stumbling block to really contend with.

And then finally, maintenance issues. Other people have noted this, too. I can tell you horror stories, doesn't bode well for the field. But it just is to show you, you know, I'm not expecting you to create incentive that's going to, you know, eliminate all these problems. But I just want you to be aware of the issues that you might be up against when you're trying to create an incentive, particularly for existing properties, that's going to work.

On the maintenance side there's often a lot of turnover in the maintenance staff. And so there needs to be incentives to kind of create knowledge transfer, and I'll touch on that in a second.

So, what do we do? Workable incentives, things that we would definitely advocate for. First and foremost, just commit to creating set-asides. Whatever they're going to be. I think

this is really important because as we've experienced on the energy efficiency side, affordable housing can't compete with market rate, whether it be even getting a simple application in for energy efficiency stuff.

It takes a lot of time to get properties to move forward on things. They often take a lot of signatures to get things done. So there are specific issues for affordable housing that really mandate that the resources are advanced enough to really look at those issues and create a little set-aside for them.

On the existing side, I advocate providing the highest incentive rebate incentive as possible. I know it sounds like a lot, but 75 percent or more of the project cost is really what's needed. A variety of incentives are needed, too.

There are a few funding models that I think definitely should be explored that haven't really, at the existing property level. Including business tax credits, third-party systems and springing liens which is a term that a former HUD model that didn't totally take off the ground, involved where a lien -- the existing lenders on a

project would agree to take a lower rung of the ladder if the savings were completely paying off that new financing structure for the -- in this case it was energy efficiency. And then as soon as the loan was paid off, then the other folks would rise back to the top.

But ideas like that that really look at the issue of existing debt and trying to overcome those.

Another issue on the financing side that I think should be mentioned is the idea of guaranteeing the loans. That might be an aspect to consider that might make it easier for existing debtors to agree to take on another loan, if the savings were guaranteed. I think some ESCOs are doing that, but I think it would be important to kind of look at that more.

But, you know, if I were to kind of narrow it down to a couple of important things that the incentives, this round should probably be structured for, one is to really improve the energy efficiency incentives, and connect them directly to solar.

I see heads nodding, so I might be preaching to the choir there, but it's really --

it's just critical for existing properties to tackle that energy efficiency issue first and foremost.

And then connecting it to solar would just be great, just more bang for the buck. But I don't think that you can really look at existing properties and separate these two issues.

Expedited applications approvals. People have mentioned that yet already. Now, one issue that came up, I think, Commissioner Grueneich, you might have mentioned this earlier, a point that you realized from the morning presentations about working with IOUs to create more technical assistance. I agree that that's necessary, but I also agree that that could be a problem when you're working with existing properties, because of the distrust, the general distrust for IOUs.

I think that if that strategy also included field advocates, I think that would be a great strategy. It's not that the IOUs aren't willing to make this thing work, but because of all the particular issues in affordable housing, I think it's important to work with intermediaries and folks that know these properties.

And then encouraging tiered utility allowances, I think, are also essential for existing properties.

Finally, on the nonfinancial program support side, there's a real lack of kind of approved professionals that the field can really rely on, just across the board. And because affordable housing is lacking time for a lot of these projects, they don't have the ability to provide oversight to contractors. So any sort of help with, you know, approved installers or prescreens, consultants, things like that I think would be really helpful for existing properties.

And finally the knowledge transfer, you know, maintenance guides, trainings, monitoring system performance, these things would really help advance the field.

There's a couple other issues I just wanted to mention. On the new construction side I think that it's a lot of developers would agree that they kind of trial-and-error new things, new technologies and whatnot. And as soon as they find something that works, it becomes a blueprint for all of their developments after that.

So that, I think, is the hope that we

can walk away with today, that as soon as some of these things really, these issues get overcome, and resources are exact to the challenges, folks are going to continue to use them again and again. And that's, I think, really encouraging.

And I guess the other thing is, let's see, oh, on the financing side the bridge loan, I think, is a really important piece, too, that no one has -- I think somebody touched on it a little bit ago.

I got a call last week from a developer who's doing a rehab project. And they're looking to get rebates in the million-dollar level for this huge project. And they asked us for a bridge loan until the rebates come in.

So I think that that might be another element to add for existing properties, or properties doing rehabs. They could really benefit the projects.

And beyond that, that is our website, so please feel free to look at that. And I'll take questions later.

CHAIRPERSON PFANNENSTIEL: Thank you, Clare. Our next panelists is Ted Bardacke from Global Green.

MR. BARDACKE: Thank you, I'm going to sit here if that's okay.

CHAIRPERSON PFANNENSTIEL: That's fine.

MR. BARDACKE: I don't have a PowerPoint. Part of it is that I wanted to listen to what a bunch of people are saying today. And we'll be following up, Mary and I, with written comments by the -- you've been introduced to the organization through Mary Luevano. I want to say that we also have an -- in addition to a policy we have an implementation side of the organization.

And so our experience in solar in affordable housing we've advised generally to the owner on about ten projects now, including the first two zero energy projects, together with the KETCH.

We have about $900,000 in rebates pending before the KETCH and the PUC at the moment. So we're deeply involved in sort of knowing how these rebate programs work now. And so speak from some issues that have come up now that we would like to fix, in addition to understanding how the affordable housing finance game works.

In fact, we introduced Affordable

Housing Associates to Jiggar Shaw at one point, so -- and Sun Edison.

So, I want to talk about sort of three major areas, eligibility, finance and administration. The first issue, and some of this came up in the first sort of informalized meeting we had a couple, six weeks to a couple of months ago here in Sacramento; and is in response to the sum of the stuff that's in the draft staff proposal from the KETCH.

The first is on eligibility screening, one really good idea that came up in that first meeting that we don't want to lose is this idea that most new construction in affordable housing either TCAC or CDLAC is the last financier in.

And one possibility in terms of screening people for eligibility is that if you got a approval for your project from TCAC that had PV in your pro forma, you would automatically qualify under whatever affordable housing program existed at the KETCH or the PUC.

That there wouldn't have to be a lot of paperwork, as we go through now, about proving to a particular entity that's not so aware of affordable housing that you, in fact, are an

affordable housing project.

The second issue on eligibility is energy efficiency. I want to echo what everybody else says, that energy efficiency is important. That there's a threshold is -- we're certainly agreeable to that. There's going to be an issue about setting that threshold.

And I may disagree with the next panelist, Nehemiah here, but we've just gone through a long process with TCAC about setting what the energy efficiency goals for affordable housing is. We led a year-long process on that, and arrived at the 10 percent number, rather than 15.

And part of that was that --

CHAIRPERSON PFANNENSTIEL: Excuse me, just for clarification. Ten percent above Title --

MR. BARDACKE: Above -- above 2005 --

CHAIRPERSON PFANNENSTIEL: -- Title --

MR. BARDACKE: -- Title 24. And part of that has to do with people's uncomfortableness with not knowing what the new incentive was. Sorry, the new standards were going to mean on actual projects.

But in terms of aligning the affordable housing solar with other affordable housing agencies that provide the majority of the funds, having that level the same would be very helpful. So 10 is sort of the baseline level at TCAC now.

And I just want to say that, you know, currently a multifamily project that gets 15 percent gets to the EnergyStar level is eligible for $200 a unit?

UNIDENTIFIED SPEAKER: 150 --

MR. BARDACKE: 150 on the coast, 200 inland. So on a project like we're talking about, 50 units, that's less than, you know, that's less than $10,000. That's, really except for TCAC base, that's really all that's out there.

So while solar is certainly less cost effective than energy efficiency, the current way the incentives are structured makes solar to the developer more cost effective than energy efficiency.

And that's an issue that somehow will have to be addressed, but don't -- I guess I want to say don't penalize the developers for an incentive structure that may be out of, slightly out of whack.

Finally, one more thing on the energy efficiency and 15 percent better than Title 24, a lot of ways to get that is in reduction of natural gas usage. And so you have this issue of balancing the solar and the natural gas, and they often don't talk to each other in the rebate levels.

Finally, in terms of eligibility, I wanted to highlight this issue of the three-, four-story split in new construction and who's going to administer multifamily buildings that are four stories or above. It currently says in the new solar homes partnership that that would be in the KETCH's -- sorry, in the PUC's bag. Or under the PUC's purview.

However, we would really argue that all the new construction affordable housing of any size be in one location. Because for simplicity's sake. And it doesn't mean the energy efficiency regulations have to change, but we really think that if you're a residential building new construction affordable over four stories or above, though the Energy Code treats you as a commercial building, you really ought to be in the -- with everybody else. Particularly as we see

projects that are sometimes a mix of three- and four-story buildings.

And that's a real common building type in affordable housing these days. Three stories of residential above a floor of commercial and something with underground parking. And so one place would be nice.

In terms of finance, rebate levels. The current KETCH affordable housing rebates, using the KETCH's own data, covers about 37.5 percent of the gross cost of a system, using the numbers of the post-2006 rebate levels -- sorry, the post-2006 cost data that the KETCH has.

And the developers that I talk to say that that's right on the cusp. Get much below 40 percent and people will start to walk away.

So, this automatically declining rebate based on time, as currently is done at the KETCH, or based on installed capacity, the way we think of it at the PUC, might be too aggressive for affordable housing developers in order to get them to have this blueprint that Clare has talked about.

If the blueprint works and suddenly the blueprint changes or is changing every six months,

people aren't going to see it as a blueprint.

This 40 percent number is a -- it's more anecdotal than sort of very well thought out. However, the declining rebates, however it's structured, will really need to understand the market conditions rather than a simple time-dependent reduction or an installed capacity reduction.

Other tax credits. Please have your rebate be the first, not the last. As you've seen, every affordable housing project is jumbling financing sources and using a lot of tax credits. And this issue of in the PUC program of a different rebate for somebody, whether they're a business and a taxable entity, needs to be thought of that the affordable housing folks will always be eligible for that upper level rebate, even if they can somehow sell their business investment tax credit on. Because I know you're looking at that two-tier system.

Finally, the final issue that I wanted to raise on financing is utility allowances. It's come up in just about everybody's thing. Heschong Mahone has done really good work in sort of educating and trying to convince housing

authorities.

To date, though, there's, I believe, only two housing authorities that have a self generation utility allowance in the state. And despite a lot of really good work by Heschong Mahone. It's going to take a regulatory push from the PUC and the KETCH to make this work.

And if it can somehow, that utility allowance, perhaps be bundled in the 2008 Title 24, and the methodology that you are working on to incorporate onsite renewables into that methodology is maybe one way to crack that nut. That's just an idea I had in the shower this morning. So, don't hold me to it by the time I take a bath with my son tonight.

But, something needs to be done on the utility allowances. And you all have quite a bit of sort of intellectual and moral authority there to help the housing folks figure that out.

Finally, on administration. I think we're all in favor of individually metering units for the energy efficiency that it can provide in terms of giving people price signals.

However, the current regulation in the KETCH program for individual metering is kind of

redundant in IOU territory because they don't allow you to do anything.

But I think that kind of regulation may prevent creative solutions in terms of ratemaking and rate classes, and new advances in advanced metering. I would just say keep some flexibility open in terms of how your programs deal with metering. Because I don't think we've all figured out how to deal with this metering issue in multifamily. Yet, -- and I wouldn't want to close those avenues at the moment.

This issue of time, 24 months, is good. I think more importantly is if the KETCH could adopt something like the PUC has, where there's a time limit on the time that the administrator has to consider your rebate application. Currently the KETCH sometimes gets back to you very quickly, and sometimes doesn't. And that, more than anything, on MJ's project that we were working on was the sort of the worry.

So that there be a 90-day response period, or 60-day, or whatever it is, give some people some certainty by which time they'll be able to tell their bank that we'll know or not.

And then field verification is great.

We really support it. We hope that the charges for that field verification would not have to be incurred by the developer. Currently we see developers of multifamily affordable not pursuing the EnergyStar rebate because the rebate, the costs of testing for that rebate exceed the cost of the rebate, itself. So if you're going to field verify, have someone else pay for it, please.

One issue that hasn't come up that sort of is important from what Clare said about staff turnover and maintenance, is we think it would be really good in your programs to require, as part of the program, an ongoing maintenance plan for the systems.

We will have -- it may increase costs a little bit of the -- but it's really going to help performance. Because, you know, on a property manager, that person onsite often will turn over every year. They're not going to know what this big, expensive, costly, complicated system does; how to monitor it. We think that's an important addition to energy efficiency, is to understand that this is monitored.

And then finally, just wanted to echo

what people have said about marketing. We think there will need to be a marketing component to the affordable housing that is separate from the phase one issues, or your new solar homes partnership. That is likely to be contracted out to an intermediary that understands affordable housing, really comes from the affordable housing world, rather than necessarily the energy efficiency world. Because it's a different language.

I would say that half of my time working on solar in affordable housing is explaining to solar people how affordable housing finance works. I do that every single day.

And if your marketing folks aren't really up to speed on that, they're not going to get in the door to the affordable housing side.

So, I think I'll stop there. Like I say, this will come in written comments, as well. But it's sort of notes from the field a little bit. So, thank you.

CHAIRPERSON PFANNENSTIEL: Thanks. Commissioner Grueneich.

COMMISSIONER GRUENEICH: Yes, just following up on your last point when you were talking about marketing, who is the audience?

MR. BARDACKE: Developers. The development -- when we have a body of 15 projects around the state, which we will by the end of the year, that are a mixture of things that are powering the units, that are common area systems that have been financed with third parties, that have been net zero, when we have that kind of body of knowledge, developers will be really wanting to know about this.

And there needs to be somebody who speaks their language who are able to quickly say, is your project a 9 percent or a 4 percent tax credit. Are you at your threshold basis limit. Master meter, or -- individual meter or an SRO type.

These immediate questions that help figure out what the feasibility, what kind of system they're talking about, is important.

COMMISSIONER GRUENEICH: Okay. One other question for this panel or anybody else who is speaking today, is that to my knowledge everything that we've been discussing today is in the multifamily affordable housing universe. And the statistic we heard this morning was, I think, that the split right now in what's being built is

about 75 percent multifamily, but that I thought I heard that there's about 25 percent of single family affordable housing or low-income housing being built.

And so my questions are two. One, is that correct, and if so, who are the universe of people who are financing and developing and building single family low-income houses? And what do they think about solar? And how do we get input from that community?

MR. KLASKE: Actually, that's a nice --

CHAIRPERSON PFANNENSTIEL: I'm sorry, if you're going to answer why don't you come up to the mike.

MR. KLASKE: Sure. Actually, that's a nice segue. I was going to try to make some comments from the last panel.

I'm Fred Klaske; I'm the founder of Sky Power Systems. We're a solar installer in the East Bay with about a little over half a megawatt of installed capacity.

But I'm here today in my role as a member of the green building committee for East Bay Habitat for Humanity. I was asked by Janice Jensen -- who unfortunately cannot be here today

and passes her regrets on -- to speak specifically to that topic.

A little bit about Habitat for Humanity East Bay. Started in 1988, and I've been involved with them since that time. They've done about 100 homes total so far. They specialize in affordable housing, single family detached, for homeowners. Unlike people you've heard earlier today, we're not really involved in rental. It's really for home ownership, itself, and all the benefits that accrue to that.

They're doing about 25 homes per year right now in a run rate. And, Tim, correct me if I'm wrong, but I think we were the first solar Habitat house that applied for and got a rebate from the KETCH for four units that we did in the Fruitvale/Davis area of Oakland. Rather interesting neighborhood, to say the least.

And projects right now that they've done, we've done about a little over 25 systems so far. Besides the four in Oakland, we have 22 in Livermore; another 26 in a EPA brownfield that's been converted in Oakland. And hopefully we get lending approved, we'll be able to do another 26 on the adjacent property right next to that.

To make it short, every single house that Habitat East Bay does from this point forward will have a 2 kilowatt solar electric system on its rooftop incorporated in with other green building techniques like orientation, passive solar, concrete, for example, for thermal mass.

The 22 units we built in Livermore do not have any air conditioning. Those of you who've been to Livermore know how hot that can be. And they don't need any because of in part the design we've done on thermal mass that we get with regard to concrete.

First of all, we're pleased, thrilled to see how much involvement and interest there is in putting together solar in affordable housing. Or as we like to say, really putting the A into affordable housing, for a lot of these low- to moderate-income families who are desperately in seek of shelter.

It's -- we're eager also to work with you folks with regards to moving this forward to implementation in the 2007 timeframe. And especially pleased to see that you are considering a set-aside, perhaps as much as 10 percent of the California Solar Initiative funding that's been

made available.

To make it brief I certainly concur with a lot of what you've heard so far today, particularly with regards to what Mary Jane earlier mentioned is needed by developers. Things like, for example, accelerating as much as possible the time between when a system is completed and interconnected and when we actually get the rebate check, itself. Because you can appreciate for capital intensive nonprofit like Habitat, that could be really a four- to five-months delay in getting the check, could really put a nail through our cash flow. So, whatever can be done to be able to help speed that along would be helpful.

I'll apologize if you have some questions that I can't necessarily provide answers to because I'm having to do this at last minute on behalf of Janice. But I promise you I will make note of the questions and we will obviously provide the answers as part of the written comments.

We do have some statistics we'll provide in terms of our findings based upon the experience of the homeowners thus far in Oakland and

Livermore; savings that they have seen; costs that we have seen; as well as other kinds of benefits.

Just the impact that we've had on volunteers stepping up. Impact that we've had on fund raising. Right now I think we've -- I asked one of the developer -- the director of development yesterday for the figures, and we've gotten around about $200,000 thus far in direct hard costs. And we're estimating probably another $100,000 in soft in-kind donations, be it materials or labor, specifically attributed to the fact that we are putting solar panels on Habitat rooftops.

Which, by the way, has, in terms of the discussion between energy efficiency and solar, I'll do the same tap dance other people did. I'd obviously like to see both. And certainly would encourage you to continue to have some requirement in there. It's nice to hear the fact of 10 percent above 2005 on Title 24 seems to be something that jibes in other parts, as well. And so we would certainly be in line with that.

And all I'd like to say in conclusion is just that only two thoughts in addition. With regards to the decline in rebate coverage over

time, you might want to give some thought to perhaps, at least for the affordable housing portion of that, pegging the rebate amount you're reducing relative to the current market cost for solar, itself.

Because I think everybody in here will agree, the biggest component cost-wise by far of these systems is the cost of the solar panels, themselves. And unfortunately, because of the supply/demand issues, they have been raising quite a bit. And so to some degree your decline is in conflict with that current market trend. So that's one thing to consider.

The second thing is I noticed earlier in the presentations there was a mention of possibility of enhanced rebate award for certain kinds of things. As we have been very aggressive within Habitat East Bay in green building, not just putting solar on rooftops, which, from a PR standpoint, has great impact. I mean people, for example, comment all the time that they can't get over the fact, wait a minute, you're Habitat, how are you able to -- I guess you can. So it begins to be kind of a kick in the head for them to start seeing it in a different way.

But you also might want to look at, what, for example, the U.S. Green Building Council has recently done, specifically with regards to their lead standard, and a draft proposal lead for homes.

And to the extent that perhaps affordable housing structures, and single family residence in particular, are able to comply with the minimum threshold for lead for homes, you might want to consider awarding some kind of additional rebate on top of that.

It's certainly something we're looking at, and during the gap analysis right now, between what we currently do in the way of sustainable building, which is part of Habitat's mission statement, and what lead for homes draft standard is currently looking at.

So, that's it then.

CHAIRPERSON PFANNENSTIEL: Thank you. Let me just ask one question which may be slightly off the subject, but --

MR. KLASKE: Sure.

CHAIRPERSON PFANNENSTIEL: -- it intrigues me. Habitat, as I know, has a lot of volunteer construction.

MR. KLASKE: That's correct.

CHAIRPERSON PFANNENSTIEL: Do volunteers put on the solar panels, also? Do they do the solar installation? Or is that done --

MR. KLASKE: Good question. Initially, -- well, actually I had been very very active early on with regards to training staff that they had, as well as training volunteers.

There have been some groups, for example, Grid Alternatives, which some of you may have heard of, is also working in that line. Coincidentally, they happen to kind of have a similar nexus in that they're trying to provide solar installation specifically for low- to moderate-income families. So they have also been working with East Bay Habitat of late, which is nice for me because it relieves me of some of that burden.

The truth be told, it's not that difficult -- maybe I'm speaking out of turn here, but it's not that difficult to install a solar electric system. Especially these days. And I can say that as a certified professional. It's not that difficult.

Maybe a full panel system with a single

inverter, a 2 kilowatt, it's not that tough. And it's in line with other kinds of electrical volunteer activities that we have.

Typically it can be taught to an electrical contractor relatively in a straightforward manner, if they're comfortable with, say, high voltage dc. Once they get over that, it tends to go pretty smoothly. You know, you don't leave all the copper bare, you tie it down one at a time.

But certainly we don't want to obviously have, you know, eager but necessarily unskilled volunteers up on there any more than we would want to have them on a say, two story, 6/12 pitch roof.

CHAIRPERSON PFANNENSTIEL: Thank you very much.

MR. KLASKE: You're welcome.

MR. BARDACKE: Let me partly --

CHAIRPERSON PFANNENSTIEL: Yes.

MR. BARDACKE: -- the answer to your sort of --

CHAIRPERSON PFANNENSTIEL: Go ahead.

MR. BARDACKE: -- the single family affordable. My sense of it is that a lot of the home ownership programs, I mean there's some

specialized folks out there, but a lot of it is being done through inclusionary projects, so that a large development will have a particular set-aside, you know, particular percentage of the houses that will need to be sold at affordable rates, rather than the market rate.

So to the extent that the KETCH, the new construction program hits big developments, you may capture some of those properties.

And the way that those programs often work is you have a subsidy to the buyer, not necessarily to the developer, to build those single family homes. And so it's a lot about going out and finding down payment assistance, those kinds of things, rather than on the production side.

Which is, I think, why you've heard more about the multifamily, because those are specific programs that assist with production.

COMMISSIONER GRUENEICH: Just one follow-up then.

MR. BARDACKE: Yeah.

COMMISSIONER GRUENEICH: Is it the local government who is requiring that a portion of the larger development be used for affordable housing?

And then, so that would be a requirement that the developer has. And then when you talk in terms of going out and identifying some buydown sources for the cost, again, is that the developer going out and identifying sources?

Or is it basically low-income people who are thinking about it coming in?

MR. BARDACKE: It's --

COMMISSIONER GRUENEICH: Or is it a mixture?

MR. BARDACKE: It's a mixture of both. There's a number of, you know, community housing works. Its ownership programs sort of are a one-stop shop for those low-income people who are out there looking for ways to make the purchase of a house --

COMMISSIONER GRUENEICH: So what you've just talked about, there's nothing unique about putting solar in that type of a development, other than thinking through the actual cost. But it's not trying to balance it with, you know, ten other funding sources because those types of programs are just doing whatever is typical for a developer?

MR. BARDACKE: Right. With the

exception of some specialized folks who do low-income, single family; but, yes, in general, that seems to be the case.

CHAIRPERSON PFANNENSTIEL: Are there -- one second, I will get there -- other questions up here on the dais for this panel? And then I want to move into our last invited speaker. Jeanne.

MS. CLINTON: I just want to test a take-away that I'm taking from this panel. That when we talk about new construction, there's a very complex web of creative ways in which you can, you know, go through a TCAC process and get bonuses and bump-ups and various kinds of, you know, sell your tax credits, $1 or $1.04 on the dollar, or whatever, and there's a multiplier effect.

On the other hand, if you're talking about existing housing, it seems to me you're not going through that whole TCAC process, so you don't have as much creativity in terms of how you can leverage the solar incentive to almost pay for the whole solar system.

So the take-away I have is that any incentive is going to have to be considerably higher for existing housing than for new housing.

Is that right?

MR. BARDACKE: Yes, and it may require some creativity in addition to absolute dollars.

MS. BRESSANI-TANKO: Yeah, I definitely agree, too. I mean you hit the nail on the head. I think with new construction the real difference is there are a lot of resources that they're pulling together. Not that it's easy, but it's do-able if you have the right folks working on it, and get the right resources.

With existing properties you just don't have that luxury.

MR. TUTT: What about major rehabilitations in that picture.

MS. BRESSANI-TANKO: That's an exception, definitely. TCAC does provide the 4 percent credits for that; you can still get the basis boost, right.

MR. MENDEZ: I was going to make the distinction that new construction and a major acquisition rehab should be put together because it's the same funding sources in that case, where a for-profit or nonprofit is going to buy and rehab a building. That's where they have to go through the assembling of a patch-work quilt of

financing.

Yeah, so going after existing owners, you know, either private, independent, or even nonprofit and for-profit long-term owners is a totally different market and strategy, as well.

MS. CLINTON: And just a quick footnote. Somebody somewhere can give me just a note to tell me how we know what is considered major rehab.

MR. MENDEZ: It depends.

(Laughter.)

MR. MENDEZ: Is the right answer. But, it --

MS. CLINTON: I should say years ago I worked in New York City on abandoned housing. And we had definitions of minor rehab and major rehab. But I bet those don't work here.

MR. MENDEZ: It depends on the program and project, but you could be comfortable with $10,000 per unit. But usually about 15,000 per unit.

CHAIRPERSON PFANNENSTIEL: Other questions up here on the dais for the panel? I would like to get to our last invited speaker. And then I know there are a lot of people here in the room who would like either to ask questions or

to make comments. And I really want to leave time for that to happen, also. Just general public comment.

So, Nehemiah Stone, next speaker.

MR. STONE: I'm with the Heschong Mahone Group. We run energy efficiency programs for multifamily, both for new construction and retrofit. And some policy work. And I have to tell you, I'm going to take advantage of the fact that I'm on the soapbox here for a couple minutes before I get into this.

It's really gratifying to hear over and over how the utility allowance restructuring helps. Because about seven years ago when I first started talking to people about that, I had to spend a half an hour explaining to them what a utility allowance was; and then how having an energy efficiency based utility allowance might be different.

A couple other points. Ted made the point that there's only two housing authorities in the state so far that have adopted what we call an OGUA, an onsite generation utility allowance. There's two dozen that have adopted an energy efficiency based utility allowance.

And for the ones that have, the difference that that makes in their net income on their pro formas will pay for virtually everything that they had to do upfront. But they don't have the money upfront.

So, one of the things when you're thinking through how you're going to make the program work, that I would recommend is don't expect them to put extra money in upfront. That's the hardest thing for them.

If you structure is so that the increased rent from having reduced the tenants' utility bills can pay for and pay back what you are giving them, that would be the best thing. Don't ask them to put in more money upfront.

A couple other points I'd like to make. One is that another very difficult sticking point on this is the issue of master meter versus individual meters, and how you work through the utility, the net metering, if you will.

And what I -- this is mostly to the Public Utilities Commission -- what I recommend you do is you make it extremely easy for people to do a master meter on the project and submetering for the individual units.

People can do it right now. But they have to jump through hoops backwards while they're on fire to do it. And people are not going to do that.

And so, you know, the benefit of each tenant knowing what their usage is cannot be over-stated. But it makes it almost impossible to work out with the utilities exactly how you're going to make the solar thing work on a multifamily unit. So let it be master metered for the project, and individual submetering on the units.

One other, and I'm just going to highlight these. Ted and I knew we were going to disagree on this going in, but I'm going to just read back to you a couple quotes from Ted, and hope that you can see the arguments in my presentation without my having to point them out individually as we go through, that disprove what Ted said.

First, the 10 percent TCAC thing was threshold -- I'm not going to quote him, because I can't remember exactly what he said. Anyway, it was due to uncertainty. It was due entirely to uncertainty. It was not due to any evidence that it was not cost effective to remain at 15 percent.

And I'm here to tell you that in most cases it is. A lot of cases it may not be; but, most cases it is.

The other thing said was that the energy efficiency programs only give $150 to $200 per unit, and that doesn't cover the cost. In most cases it more than covers the cost. It's a net winner for the developer.

The difference is how early the programs get to help them. If the developers come to people running programs early on, we can typically show them how to meet the 15 percent, sometimes for free; sometimes for, certainly for less than the $150 or $200 that the programs give.

If they come in late, and they're looking for things to make it, you know, 15 percent more efficient, it's expensive to add things in later on.

Okay, I'll step down off the soapbox and go to the presentation.

This is my starting point for virtually every presentation I make. And, you know, the point of this to me is if you can't -- if the utilities are not affordable, it's not affordable housing. And I don't care what else you do, if

you can't afford the utilities it's not affordable housing.

The average household spends 4 to 5 percent of their income on utilities. And people in affordable housing spend about 20 percent; if they're on SSI in affordable housing they spend about 25 percent.

When SDG&E got out from underneath their stranded assets back in 2000, and were able to pass through the generation costs that they were facing, some households in qualified affordable housing units at that time were paying 70 percent of their monthly income for utilities. That doesn't leave a lot to put food on the table or clothes on the kids.

The point from this graph, this graph actually stops in early 2005. And this, you know, assuming 1982 as the base point, this shows the relative cost of different energy sources going forward. And you hear a lot of people talking about gasoline today, and how expensive it is. Gasoline is the dark blue arrow there. And you see that it's about 150 percent what it was.

Natural gas is the light blue arrow. Natural gas has gone up a lot more since 1982. I

think we can expect it to go up more. And that leads directly to an issue that was being talked about earlier today, which is solar hot water.

Solar hot water today is not cost effective if you have natural gas. It is if you have electricity. And those two things are true in virtually every case. It's almost impossible to find an exception to those. As natural gas goes up, or if you're on propane, then the equation changes.

I'm just going to flash through these. Most of the slides that are in here at this point are in there for you to look at later. I don't want to spend a lot of time on them. I want to get to the meat of the issue.

Go ahead. One of the things here is that I'd like to point out is, although the system has been getting more efficient, electricity still has been rising faster than everything else. Going to put on my glasses to get to this part.

The point of this is that when we think about how much it costs to run a household, and the amount of money we spend on energy, as a percentage obviously it's a whole lot higher for people in affordable housing. I'm just giving you

more arguments for why this program ought to put more, but make sure that more money goes into affordable housing than elsewhere.

If we take a look just at the electricity portion, the point was made earlier that, you know, you get 15 percent better than the standards. Most of that's gas, because of water heating.

Let's take a look at the electricity portion. And of household making under $10,000 on average, they're spending $569 a year on electricity. If you can just reduce that by half you've made a big difference to that family. And that's just the electricity portion.

Energy costs have gone up, over 20 percent. Natural gas was supposed to go up this last winter, about four times what the historic average is, but instead it only peaked at about two or three times. It's obviously come down some since then.

But the word only there is highlighted because only means something different to you and me than it does to people in affordable housing.

These are just some caveats before getting into the next set of slides. One of the

things that you need to know -- well, first, I'm asked over and over again, how much difference did the change in the 2005 standards make.

And we've been building multifamily housing over and over, and how much difference is this going to make. And the answer is, well, how long is a piece of string. It really depends upon your design. It depends upon what your building is like. It depends upon what you got used to to meet 15 percent better than 2001. And it depends what climate zone you're in.

And if you took advantage of the loopholes that were in the code through the 2001 cycle, you're going to face a huge hit now to try and get 15 percent better than 2005.

If you were doing good design before, you had good shading, you had good orientation, you had good equipment, some buildings that were 15 percent better than 2001 are 17 percent better in 2005; doing nothing more than upgrading federal standards on equipment. Nothing more than that.

So, you know, there is no -- I wish there was a single answer, you know, what's the right level, but there isn't a single answer.

We've seen that 30 to 50 percent cooling

reductions are cost effectively possible. We just helped Roseville design their new multifamily program. And they're, you know, since it's an electric utility they're only focused on the electricity. And they're giving out $400 for the second level in efficiency. And for most buildings that's going to be between 30 and 45 percent. And that's all, you know, that $400 covers the cost. It's not like, you know, they're only going to cover 25 percent of it.

So, with good design it is possible to get tremendous gains well beyond the 10 percent or the 15 percent.

And if you're going to be going after PV, you obviously need to get the loads down as much as possible first.

Go ahead. This is an illustration of what I was saying before about, you know, the difference between 2005 and 2001 code. The light orange bars show, you know, 15 percent better -- this is the same building -- 15 percent better than the code in 2001. And the brown ones show 2005.

And you'll see, you know, there's one case they're building three in climate zone three

that was 15 percent better; it didn't even qualify with the 2005 standards. And the same thing for building two in climate zone 12.

Whereas building one has a higher percentage better than the standards under the 2005 code than it did under the 2001.

All of those have to do with the specific design criteria of the building and what they're using to show compliance.

I'm going to go through -- I've got three examples here; I'm going o delete two of them unspoken. You can look through. But for the interests of time I'll just go through the first one.

This one is in Davis. It's 36 units. And it started off just a few percent better than the code. And, you know, when you do energy compliance, when it's really hard to get to zero, so if you're going to have to quality it's typically 1 or 2 percent better. So that's nominally zero. It ended up being 30 percent better than the code.

This is what it looks like. These are the measures they adopted. I don't want to go through each of the individual measures, but the

cost per unit for those measures is listed there. And on the next slide you see the total incremental cost was $377 per unit. And the utility program paid for $150 per unit.

That left net first costs, incremental first costs of a little over $8000. The net savings on this project is $7000 a year. If you know of an investment vehicle that gives you a return like that, please let me know, I've got some money that I want to invest with you.

I don't care whether it's affordable housing for-profit, you can't find a better investment than energy efficiency. As I said, we'll go through these others, but I just want to show you that, you know, this applies across a wide range of buildings. This one ended up about 40 percent better, and again with a one-year payback.

Go ahead. Keep going. These numbers are roughly accurate. I don't want you to take these to the bank because, you know, as I said it changes by building. And what I did here is take a look at, you know, if you're looking at a range of 1 watt to 2.4, let's see, 1 kW to 2.4 kW per unit, which, by the way, is very close to the

numbers 2.5 kw per unit that we're quoted for the project in Sacramento.

And you take that starting point of -- well, I'm not going to put any energy efficiency in it, so I'm just going to put on a system that meets that whole load. Roughly that system would cost you over $9000. If you start reducing the amount that you need by energy efficiency, and you get down to 1 kW, then you have saved over $4000 in the cost of that system. You've improved the energy efficiency by 58 percent.

I need to tell you, for most buildings that's a bit of a stretch. There's a -- the rule of diminishing returns means that by the time you get to about 45 percent, you probably don't want to spend any more dollars on energy efficiency; you probably want to start looking the other direction. But you can get to about 45 percent energy efficiency and have it be more cost effective to be putting your money in energy efficiency than solar.

Next slide. The only thing added on this one is the last column, which is the cost of efficiency upgrades. And you'll notice the first two ticks are zero. That's because you could

blindfold me, tie my hands behind my back and I could stumble backwards into those efficiency level. Those are no-brainers.

They're the incremental cost, by the way, for a water heater, and I know that's not electricity, but the incremental cost for a water heater that's a .62 energy factor water heater, over the five-eights that's required, is zero dollars everywhere in the state.

So, if you can't figure out how to get a little bit of percentage just by buying the right equipment, then you're in the wrong profession.

But, as you can also see, it starts getting expensive by the time you get up to the higher efficiency percentages. And, again, when you're in that 33 and that 42 percent, that is cost effective. It's wildly cost effective. Again, the way that this becomes cost effective to affordable housing is through the utility allowance adjustment and the fact that rents go up to pay for this. But they need the money upfront.

More data, it's in your report, we don't need to go over that. Go ahead. This last section I want to go through really quick, but I think this is extremely important. You're

thinking about the nuts and bolts of the program, and how that gets cost effective, and what you should do.

One of the things that's important to think of is the community investment, the local economy. And energy efficiency has a tremendous redevelopment worth. Through the multiplier effect, the fact that for every dollar you spend it gets respent and respent and respent, and a certain portion of it gets spent in the community and a certain portion doesn't.

You end up having a community investment from energy efficiency that derives from the fact that most of your money spent on energy leaves the community; most of your money spent on the other market basket of goods that people in affordable housing spend their money on, stays in the community.

Over 70 percent leaves the community when it's spent on energy. That gives you a multiplier effect of only about $1.40. And here's how that works out. You know, first time you spend it, it's $1. Second time it's only 28 cents, et cetera, till you get down to the point where you get nothing for it, $1.39.

When you spend it on the average market basket of goods, and by the way, this comes from Department of Finance data on what the multiplier effect is for individual things that you can buy. About 25 cents leaves the community; it's a reverse order from energy. That means it's a multiplier effect of $4, so every dollar of energy cost savings to the tenant is worth about $2.50 to the community. There is no better investment in community development than energy efficiency.

This is how it works on that piece. I'm not going to go through the rest of it. If you can go to the last slide, though. Local housing authorities spend about 25 percent of their operating budget on utilities. They are owners of affordable housing. And their budgets are shrinking. So that 25 percent, if the energy costs to them don't shrink, that 25 percent is going to get larger and larger; they'll have fewer and fewer people that they can have on staff to do the things that are necessary. And they'll have less money for the rest of the programs.

So, energy efficiency is -- we've been talking about the nonprofits and the for-profits, the public housing authorities, energy efficiency

and solar energy is important to them, too.

Thanks.

CHAIRPERSON PFANNENSTIEL: Thank you; that was good. Questions from up here on the dais to Nehemiah.

If not, then I'm going to ask, others here, others in the audience, questions or comments. Please come up and give your name.

(Pause.)

MR. JOHNSON: Hi. I'm Mark Johnson with Golden Sierra Power. First of all, I want to say it seems like most of the participants that are participating in the workshop today speaking, are talking or communicating to you about the experiences and the challenges that we in the industry have been experiencing for the last three or four years.

And basically, in my opinion, from being out there, selling systems and installing systems, and dealing with manufacturers, it really comes down to one key word here that we need to overcome, and that's risk.

And that's because before we could get portfolios or conventional lenders to come out and provide finance for single family residences or

multi or retros or new construction, we need to figure out how to sell no-risk on these projects to the financial community.

One thing I heard from the developers was they don't want to take the risk by having debt or carrying on a long period of time. This is something we have to do in the industry daily. We have to put into our price points the cost of financing over a period of time. I've learned the hard way that I can't expect the Energy Commission to make payments to me in two to four weeks. But I have to base my business model around that deal.

And so I would just like to say to the panel here that these are certainly challenges that we've been dealing with for the last three or four years. And those of us who have been able to stay in business have been able to figure out how to overcome those challenges and deal with those challenges. So I'd like to make that first.

But I'd like to get back to the risk factor first, because I think that's really the big play here, is that nobody really wants to take the risk. And the reason why is because of the unknown on the production factor.

And until we can figure out how to

communicate to the World Savings or the Bank of Americas or the Wells Fargos that our systems are actually producing a certain amount of kilowatt hours based on whatever criteria we are, we will never be able to take this to a commercial level that will allow those type of lenders to borrow. Which they have the programs set up. Fannie Mae and Freddy Mac have programs available for affordable housing. But we can't provide a way to overcome the risk factor to get them to come onboard.

An easier method would be getting a portfolio lender like Washington Mutual or World Savings whose headquarters is right here in Oakland. I have met with those senior officials. If we can overcome the risk questions and providing a foundation of what these systems will do in the future, we could get the opportunity to get basic financing for these systems to be able to. And I think once we do that, that then will open the door and rectify a lot of these problems, you know, a lot of the third-party issues that we talk about, a lot of the financing issues that are really stagnating the growth in our industry.

So, that's really all I have to say.

Any questions?

CHAIRPERSON PFANNENSTIEL: Thank you, Mark. Questions?

MR. COLLORD: Just a comment. I suspect that a lot of the public lenders also are going to be somewhat skeptical of these solar systems. And so I'm wondering if you or others have thoughts about the best way for us to reach out to private lenders and public lenders and bring them into the process.

MR. JOHNSON: Can you define a public lender --

CHAIRPERSON PFANNENSTIEL: Mark, you need to go to the mike.

MR. COLLORD: Yeah, by public lender I was referring to like the state housing finance agencies, HCD, TCAC --

MR. JOHNSON: Well, actually there is actually a program here, the energy efficiency financing program, that is available for all public entities to take advantage of. And it's run right here through the KETCH.

It has -- in fact, I think it's a great program. It has great guidelines. Basically it takes the cost of energy savings over ten years

and allows you to pay it back at 15 with a low interest rate of I think it's 4 percent or 4.25 percent right now. Used to be 3.95.

MR. COLLORD: Right, but many of our developers, they're dealing with, you know, multiple public agencies, the state, local, sometimes federal level --

MR. JOHNSON: Well, the State of Washington, one of the things that's happened is the State of Washington actually has implemented a program that allows the utilities to loan the funds needed.

The problem here in California is that we would need legislation to take place that would allow the utilities to do that.

The key word that's being used in that phrasing in Washington is that the utilities, which are, I believe, mostly IOUs or smaller utilities, can loan based on conservation type projects. So it's the only type of lending that the utilities can provide. I don't want to -- but I'm almost sure it's the only lending that the utilities are allowed to provide to the users in a sense of for installing PV.

CHAIRPERSON PFANNENSTIEL: Thank you.

MR. STONE: If I may, --

CHAIRPERSON PFANNENSTIEL: Yes, go ahead.

MR. STONE: -- I have a little bit of an answer to that. We have actually helped a couple builders of affordable single family to do specific utility allowance analysis on their projects so that they could take that and use it to help qualify the buyers of their projects.

Now, the reason it was believable to them is because the Energy Commission has essentially blessed MICROPAS and ENERGYPRO as, you know, valid models for looking at energy efficiency. And the Energy Commission has blessed something for solar hot water, too.

There is nothing like that for PV. And if you guys had a model --

MR. TUTT: Yet.

MR. STONE: I'm sorry? It's coming, okay.

MR. TUTT: Not yet.

MR. STONE: Well, I've put it on the agenda the last two iterations of the standards. And I think a couple times ago I was laughed at when I put it on there. Glad to know it's coming,

anyway.

But, once that happens, then I don't think there will be a problem with the lenders. I mean I have talked with BofA and Wells Fargo, and they don't have a problem with a firm like HMG doing the calculations of what the savings to the tenants will be, so that they can see what the payback will be, and see the stream of income from it.

MR. JOHNSON: Could I follow up on that --

CHAIRPERSON PFANNENSTIEL: One last quick comment. We have others who are waiting to speak.

MR. JOHNSON: No, in regards specifically to this. What you're looking for from the lenders to do is to be able to change the qualifying ratios. When you see the lenders come on board was when they'll change their qualifying ratios. Which means that that will allow the borrower to get credit for the production that they're doing.

Today there is not a lender out there that will qualify you or change your ratios based on production values.

CHAIRPERSON PFANNENSTIEL: Thank you.

MR. OVSHINSKY: Ben Ovshinsky from Evonics One (phonetic). Very simple-minded answer to that would be to go to the very top of the private sector, lending institutions, financial institutions, the top management, top leadership to get their buy-in. And that would have to be from the top of your side, from KETCH, PUC, and the Governor's Office, if not the Governor, himself, probably be willing to devote an hour or two to a half-day session with top leadership.

Instead of relying on the infinite possibilities of a million, or you know, several thousand small players and several hundred larger players, over time mixing it up. But just directly go to the top as a program. You might not accomplish that in one go, but if it gets across this is what you need and want from them, and that's their civic duty, and Arnold stresses it, it might get somewhere.

CHAIRPERSON PFANNENSTIEL: Thanks. Yes.

MS. CLARKE: One thing that I don't think we talked about today is the fact that in PG&E's, you'd lose your net metering ends at the end of the year.

And so what we have to do is undersize our system, because we don't want to produce more and then just give it away. So I don't know if that's going to be changed in a sense specific to affordable housing. But in general it would be nice not to have that, so we could get either credited with money, or paid back, or maybe credit on our gas bill. Wouldn't that be nice?

CHAIRPERSON PFANNENSTIEL: An increase in the net metering cap is being considered by the Legislature. We don't know where that will come out.

Other comments?

MR. HECKEROTH: Steve Heckeroth, Energy Conversion Devices. We're the makers of Unisolar, the thin, flexible, light-weight, thin film, photovoltaic material.

I've been in the solar business since the early '70s. And I looked around the room and didn't see too many gray hairs, so I thought you might be interested in the experience I had, especially in the hot water industry, solar hot water industry, with the front-end rebates.

I found that that was the main problem that killed the solar water heating industry. Was

there was a lot of people that got into solar water heating just for the rebate, and they didn't put in a real good system because there was no monitoring necessary.

So this time around I was real encouraged to see performance-based incentives. But I think we have to look at where the performance base came from. It was the German model. And the German model pays feed-through tariff for kilowatt hours. And I think that feed-through tariff isn't being represented in what we've been told is our PBI.

They pay like 50 to 70 cents a kilowatt hour over 20 years in the German model, which is very high. And I'm real encouraged by the large system, you know, 17 to 26 cents PBI. But I think maybe we should call it PBI-Light, or mild PBI, or maybe we should just say that it's, you know, a kind of PBI washing, because it's not a real PBI that we're talking about so far.

And I think if we want long-term low-risk program, then we have to have a long-term performance-based incentive that will allow these people to have something they can grab onto and loan for. So that's mainly what I wanted to say

about PBIs.

I did want to run one other scenario across particularly the low-income idea, because what I see happening now is that in the transportation sector there's a huge potential for powering some of our transportation sector with PVs, for the plug-in hybrids and electric vehicles.

And with the current push that we've been seeing over the last ten years to go to these huge passenger trucks that get like ten miles per gallon, as soon as there are some more efficient vehicles available, those will basically be free to a good home. And probably end up in low-income hands where they will be very expensive to operate. Just like we've seen low-income housing is the most expensive to operate in a lot of cases because it's low first costs.

But with cars, if we could use the PV systems in conjunction with electric vehicles for low-income people; and try and get them in electric vehicles, then we could offset a huge cost for them in these trucks that they will be driving, because they'll be the only affordable vehicles in the future.

Thanks.

CHAIRPERSON PFANNENSTIEL: Thank you, sir.

MR. HENRY: Good afternoon, I'm Joe Henry; I'm the Director of Regulatory Strategy and Analysis at PG&E. I wanted to say thank you very much for the opportunity to be here. And there are actually quite a number of us from PG&E who came up to listen this afternoon.

It's not our first learning experience here on affordable housing and low-income solar. We actually had the opportunity with the Green Lending Institute and Nonya Collier to work with some of the affordable housing community. Many of the folks are here today, to increase our understanding of what some of the issues are.

And we recognize that there's a lot to learn here. And I started out at PG&E in the finance area, and I was quite impressed actually with the creativity that has to go into the financing of these units, and just all the things that come together. So, I'm looking forward to learning more about that.

But what we particularly see is that there are some tremendous opportunities for our

low-income and other customers to offer solar as part of a package or a portfolio of services, the energy efficiency, solar, and other education and outreach things that we can do as a provider of these services to our customers.

So we've very much appreciated the opportunity to be here and hear more about it. And we're looking forward to commenting next week on the proposals.

Some of the challenges that we've seen here, we heard loud and clear as the challenge of the upfront investment and trying to find ways to finance that. The split-incentive issues with the owner of the building and the fact that the benefits of energy efficiency and the solar incentives are going to the tenants as opposed to the owner, and how do you put that back together.

And then perhaps most importantly the bandwidth issue for the project developers and for the folks who are actually putting these deals together. They've got a lot of things coming at them. Commissioner Grueneich, I think you said earlier, I thought you put it very well. It needs to be seamless, it needs to be streamlined, it needs to be put together in a way that they can

understand it.

One of the other things that occurred to us this afternoon listening to the various comments was that our Pacific Energy Center is already involved in outreach on a lot of these issues with solar hot water heating, photovoltaics, energy efficiency. It seems like some focused outreach to financial institutions, the building and permitting departments, and some affordable housing groups might be some very obvious places where we could help increase the level of understanding; increase the comfort; and perhaps help with the streamlining of this process a little bit.

So, thank you again for this opportunity, and we'll look forward to talking with all of you at some point in the future.

CHAIRPERSON PFANNENSTIEL: Before you leave, one issue that's been raised several times today, that I think really concerns -- and I think should concern the utilities, is the question of energy efficiency and whether the incentives for energy efficiency, coupled with PV, are, in fact, the correct ones in the affordable housing community.

A lot of what I heard today I'd not quite seen before. And certainly I think in the market rate housing probably isn't as much the case, I think, in terms of where the incentives come from are different here.

So we would suggest to the utilities that it's an important area for you to take a look and see if there are some ways we can reexamine the incentives that you offer for your energy efficiency programs.

COMMISSIONER GRUENEICH: And let me just follow up. As the assigned Commissioner, I've already given some thought to that, and we do have a window of opportunity because we will be reviewing the investor-owned utilities' low-income, energy efficiency programs.

They are scheduled to come in with their proposed applications July 1st. And then we're scheduled to get a decision out by December 1st. And that will provide funding for the next two years.

Currently the programs covered for energy efficiency and those applications actually are provided at no cost to anybody participating. And it's really the ones in the multifamily sector

that we want to give some thought to.

So, one of the things is a preview that I will be doing working with the staff is taking a look at that. And we'll probably be giving a directive to the investor-owned utilities in our general energy efficiency docket to get some information so we can take a more comprehensive view of what are the various incentives.

And another factor which I brought up before was if there is going to be some assistance that would be involved for the Energy Commission's program with the investor-owned utilities, that's something that we're going to have to get a dollar amount on probably sooner rather than later.

MR. HENRY: Well, those are exactly the right questions. From what we've been able to -- or at least where our research has gone so far is looking at, you know, what we are doing on the low-income energy efficiency side.

And then how would we integrate solar there. What are some of the issues that make it difficult, especially in the multi-tenant submetered environment to flow the benefits of solar to the individual customers there.

So that's something that we've

identified as being an important issue, and one that we think we have some ideas about how you might try to get around that.

And we will be focused on those issues that you raised, so we'll look forward to your direction.

CHAIRPERSON PFANNENSTIEL: Teresa, did you have a question of PG&E?

MS. CLARKE: One more comment, kind of related to the appliance rebates for low income. For instance, we have tenants who would like to get the new appliance in our existing buildings, but they have to go do it themselves.

And sometimes it's just really difficult, either because of disabilities and just time and things. And we're not allowed, as a nonprofit sponsor, to go and get that appliance for them.

And so I think the multifamily housing we're dealing with low and very low income folks, oftentimes disabled seniors. We need to be able to help them get those rebates. A lot of times we're not allowed to do it.

And so the same thing with the net metering is if we can somehow, you know, be the

broker, in a way, of getting the low-income tenant that benefit, we're fine. That's the whole reason we exist is to bring benefit to our tenant. So let us, you know, get involved in that instead of kind of shutting us out.

And the same thing with the CARE -- there's some CARE rates that we could be taking advantage of, but we can't go help the tenant get those. They have to do it themselves. And, you know, nowadays it's more about support of housing, trying to support the tenant and their life could be better.

So, thinking of it in that way, in the multifamily industry we're supporting our tenants. So helping us help them is a way to look at it.

MR. HENRY: We would be very interesting, Teresa, in following up with you a little bit more on that. There are many rules that are in place today that are as a result of concerns about privacy, tenant privacy, that, of course, we want to be respectful of.

But at the same time, things like CARE and the need to re-up people every two years, get them to reapply to CARE, making sure that they're getting the full access to all the benefits that

they're eligible for.

Those are some of the more interesting things, actually, that came up in the forum that we had with Green Lending, that we thought, you know, here's an opportunity where, because of the monitoring that has to go on already in the affordable housing area, income information is already known. You know, if we could just match that up. You've got --

MS. CLARKE: Yeah, we do it every year.

MR. HENRY: -- the information; we've got the programs. Let's just try to figure out how to make that more effective and better for our customers.

COMMISSIONER GRUENEICH: Let me again just emphasize that in the cases we're going to be handling the second part of this year, it's going to include specifically looking at the CARE programs, as well as the low-income energy efficiency.

So, I really encourage you to not only talk with PG&E, but get in touch with Kelly Hymes, my Advisor, because we'd love to get some input, some perspective from you and other folks today. Because that's not something that we've heard so

far.

CHAIRPERSON PFANNENSTIEL: Thank you.

MR. O'CONNOR: Good afternoon. My name's Todd O'Connor, Chairperson Pfannenstiel and Commissioner Grueneich, and I represent a new startup company by the name of Brobeck Solar. Essentially one individual by the name of Bill Brobeck, who is committed to expediting the deployment of solar on rooftops for customers who haven't had the opportunity to do so before.

He's patented an approach whereby a customer would get a credit for every kilowatt per hour that's produced; and take that credit, put it in similar to like a scrip program we have for schools where our kids get a debit card. And use that card to buy gasoline; to buy energy efficiency appliances at your local Sears store.

And this way it's a very simple approach to help reduce the cost of energy that Nehemiah talked about for affordable housing unit tenants. And this is just something we will talk to stakeholders about. It's just in the beginning. We have more questions than answers. But it's a patent, it's a vision, and we look forward to participating with all stakeholders.

Thank you.

CHAIRPERSON PFANNENSTIEL: Thank you for bringing that to our attention.

Are there other commenters?

MR. SABELHAUS: My name is Pat Sabelhaus; I'm here on behalf of the California Council for Affordable Housing. I thought maybe I would throw a few caveats in today on behalf of the development community.

We represent both profit and nonprofit developers across the State of California. And I think one of the interesting comments that Nehemiah Jones (sic) made, and I really appreciate his presentation to the Council here today. I think that the utility allowance schedules that he referred to and showed in his PowerPoint is probably one of the most complicated unresolved issues, Nehemiah, that the Tax Credit Committee has just never grappled with and never dealt with effectively.

Because you have housing authorities in 58 counties and numerous cities that all have responsibility for publishing what is probably the most significant piece of the rental income Nehemiah was referring to. The developer has no

control over this, and the housing authorities all operate in different ways, because there isn't really a strict guideline that HUD imposes upon them, except that it has to be reasonable in terms of how you determine that allowance.

And you have, in some instances, where a four-bedroom unit in the most rural counties will be with a housing allowance that was just published by HCD, of a couple hundred dollars, or $150 for a three-bedroom unit. That will, if you can't fix the problem, and right now it's not easy to fix because you have to go to PG&E or to the utility company in that locality and have them examine your plans and do a separate analysis to determine what a fair allowance would be.

And that simply is something that you can't do with any ease that I know of, anyway. They don't have time for it, they don't have a dedicated staff to it. And so it just complicates it for the developer and for the tenants who are the recipients of the affordable units.

There is also, much to my chagrin, I think, and we've never done a good job of trying to deal with it before this Commission or any other commission, there is no separate allowance

that seems to me that should have come into being when they imposed the improvement of 15 percent over Title 24 requirements. Which my clients have been doing now for the last three or four years. That was bumped up, as was testified here earlier today by another 10 percent. Without any increase in the amount of tax credits that are to be made available to the developer who is trying to comply with those standards.

And most importantly, there is no separate allowance that's ever been calculated for the different climate districts that Nehemiah Jones spoke of that would make it easier and give it real incentive to any developer to make sure that he has a reason for wanting to utilize those special Title 24 incentives that they're building into the program now.

But I think all of those little pieces that are going their own way somehow we have to come together. And I'm here today because I just wanted to see who was going to be present.

I'm not one who has participated very effectively with the energy conservation group that's here today, even though we've had them at our conferences in the last couple of years to

talk about some of the measures that could be taken.

But I think we have to have more discussions among the conservation groups and the developers as to how some of the more basic problems could be solved that would help this Commission get on with a system that would be attractive and serve as a true incentive for everyone to participate in the program.

Thank you very much.

CHAIRPERSON PFANNENSTIEL: Thank you. I'm going to hand it back over to Jeanne in a second to talk about next steps. Before I do, I want to very much thank all the panelists we've had today, the people who came here, and -- I see there's somebody on the phone -- and spend time. Excellent, excellent preparation and presentations, very thoughtful. And I think raised the issues for us.

And I would also say that we are hoping to get written comments, written comments a week from today, the close of business the 20th. And in the notice it said that they can be sent just to the Energy Commission. We'll make them available to the PUC, also.

With that, let me ask for the last comment from the person on the phone, and then hand it over to Jeanne. Mark Sinclair from Clean Energy States Alliance. Mark, can you hear us.

MR. SINCLAIR: Yes, I can. Can --

CHAIRPERSON PFANNENSTIEL: Go ahead.

MR. SINCLAIR: -- you hear me? Yes, can you hear me?

CHAIRPERSON PFANNENSTIEL: Yes, you're fine.

MR. SINCLAIR: Good. I don't relish being the last speaker, so I'll try to make this brief. I appreciate the ability to participate through the webcast.

I represent a nonprofit organization called Clean Energy States Alliance. It's a organization that assists state clean energy programs like the California Energy Commission in developing their strategies and programs to facilitate renewable energy markets and development.

I just wanted to let both the California Energy Commission and the Public Utilities Commission and their staff know that a couple of months ago we published a new program guide for

states that lay out a number of strategies for fostering solar energy and advanced efficiency in affordable multifamily housing.

And while the California Energy Commission certainly has this document, we will also provide it to the Utilities Commission. I think while California as always is leading the charge in another area of public policy, that there are lessons that other states are beginning to learn in this field, in this space, if you will.

And our program guide attempts to lay out some fairly specific recommendations. I also would like to add that Global Green was very instrumental in helping us with this program guide. And so that it has some of the issues that have been raised today in the California context are considered in the program guide.

Our organization would be pleased to provide resources or recommendations as it makes sense. We will also file some comments on the various issues that were raised today.

I have one specific process recommendation to make right now before I close. In the program guide there are two states in

particular, Massachusetts and New Jersey, that have created very specific partnerships between their housing agencies and their public benefit -- their system benefit charge funds, like the California Energy Commission, to actually cooperate and partner to facilitate and promote solar energy applications.

And out of those experiences in Massachusetts and in New Jersey, there are a lot of emerging lessons in terms of many of the issues you've been talking about today. The need for close coordination between state agencies; the need for simple rules and for very high incentives. And for secured sources of dedicated guaranteed loans that fill the balance.

And a lot of those details are being learned real time in New Jersey and in Massachusetts.

And so I would recommend at a future workshop we'd be very willing to help arrange for this, that representatives from those two programs come to talk a little bit about what they're learning from actually creating a program that works with the affordable housing sector, and with state agencies, to insure that everybody's pulling

on the same oar, and that you've overcoming some of the serious financing and implementation issues.

And you were talking today, for example, about the need for technical assistance. Well, New Jersey, basically a state ombudsman between the housing agency and the energy office is really working to provide technical assistance to affordable home developers so that they can understand what the problems are, and overcome those challenges.

And I think the whole structure that New Jersey has put together in terms of state government working to facilitate this technology application is interesting and is yielding some success.

And then finally I'd just say that those states are also determining that they really need to provide incentives for many of the soft costs. Not just the upfront rebates, but also the costs of making this stuff happen with redesign and all the developmental challenges that occur with a major housing project.

With that I will close. What you're doing is very exciting. It's going to create a

lot of lessons for other states who are looking at this link between energy efficiency, solar and affordable housing as a promising new area for this technology and for social equity goals.

So, I would be happy -- we will provide some comments and we'd be happy to facilitate, if it's helpful, some input from some of the other state programs that are taking some innovative approaches to this challenge.

Thank you for your time.

CHAIRPERSON PFANNENSTIEL: Thank you.

COMMISSIONER GRUENEICH: Thank you. I was just saying that I was handed a copy of your report, and I was just glancing through it. And it seems like a very excellent resource.

CHAIRPERSON PFANNENSTIEL: And so we will probably most likely take you up on your offer, Mark, in the near future. Thank you for calling in.

MR. TUTT: And if there's anyone in the audience that would like copies of that report, I do have some extra ones. Just see me after the workshop is over, and I can --

CHAIRPERSON PFANNENSTIEL: Now, back to Jeanne, thank you.

MS. CLINTON: I had to guess before I came today what the next steps would be after we listened to all these remarks. So these are sort of generic.

But I think it's very clear that while we have many people here in the room who represent different stakeholders, we still don't have everybody in the room who has a stake in affordable housing. And I think in particular we heard that we may not have some of the public housing authorities represented in the room today.

And clearly we don't have the individual homeowners who live in those inclusionary subdivisions represented in the room.

So I think there's a challenge as certainly the PUC goes forward since we expect that -- my second point is the two Commissions need to clarify how we're going to put a dividing line, if you will. What's a sensible dividing line between the kind of program that the Energy Commission is targeting, which we all recognize is focused on new home construction. But it's just a matter of what shapes and sizes of new home construction is going to fall into their basket.

And the PUC has everything else, not

just in the residential sector, but in the other nonresidential sectors, as well.

So, part of who the stakeholders are and how we engage with the stakeholders has to get matched up against, well, which stakeholders are going to need to participate in which arena.

And then I might say that some of the issues that I think we, at the PUC, will see on the agenda still to be worked through is based on what we've heard, and you know, how much money there is to spend, and the size of money that are grants, or nonpayable loans that folks are looking at.

Do we try to broadly target the hundreds of thousands of housing units that are affordable. Or do we come up with some targets, you know, start with those who are most in need, or start with those that have the biggest roofs, or, you know, there are any number of ways that we could approach that.

And then some programmatic approaches that need to be worked out in terms of, you know, grants versus loans, and how to marry it with efficiency. And, you know, a lot of programmatic approaches that we've heard about.

And finally, I'll skip to the bottom one, which is the administrative structure. You know, some people have said don't set up a new administrative structure; you know, just give the money to somebody who's already dealing in this world and let them add it to, you know, the way they're doing this.

And I think we've got some other challenges to keep in mind, too, which is both organizations' funding right now is targeted at investor-owned utilities service areas, and not at communities that are served by municipal utilities. So we have to think about that, too, in terms of what that means for administration.

So, in general, the PUC, I think, timeline will be to, as I presented this morning, to go forward with this realistically probably intensively in the August/September timeframe, because in the next 30 to 45 days we're intensively working on putting out the proposed decision for the mainstream program.

That reminds me, I neglected to introduce Dorothy Duda, who is sitting there. Maybe, Dorothy, you could raise your hand. Dorothy is the Administrative Law Judge who is the

writer of the decision for the PUC in the solar case.

So, realistically I think August/ September, into fall timeframe is when we'll be able to sit down and grapple with ideas and proposals. And maybe the Energy Commission will have figured it all out by then, and will save us some time.

Although we will commit to participating in tandem as we go forward, because i think, you know, until we figure out how our organizations are going to do this, there's no need in making you folks come through two different forums all the time.

So, I know these are not conclusive remarks, but I just want to give you a sense of what we see on the horizon. I think today has probably raised more questions than it has answered things that we need to know. So there's going to be a lot more exploration that has to happen.

CHAIRPERSON PFANNENSTIEL: Tim.

MR. TUTT: I think that I do, and since Commissioner Pfannenstiel had to leave for a meeting, I'll then turn it over to Commissioner

Grueneich for closing comments.

We have been on a slightly faster schedule than Jeanne laid out for the CPUC. And we obviously are very interested in this, in getting affordable housing participation in our programs. We won't be doing anything until we get the written comments, but we probably will be looking at those in June and July and trying to come up with some structure that we can share with the CPUC.

I would anticipate additional workshops on specific issues. And I would anticipate them being joint workshops. And we will work with the CPUC's workload and schedule to try to set that up as best as possible for everybody.

I just wanted to say Fred Klaske here today mentioned that he -- representing Habitat for Humanity. He was one of the first people that came into our existing program with kind of an affordable housing project for us.

Paved the road for much of what happened. And I remember that the road was paved with some degree of frustration on both sides. Because the affordable housing picture didn't fit into the program that we had developed very well.

And so sitting here today, I mean I can see the somewhat daunting complexity that is involved in the affordable housing world. Ted mentioned that he spends half his day explaining this, and I've sat here for a full day and I think you need to explain it to me again, Ted.

(Laughter.)

MR. TUTT: But we are committed to working through this, to having affordable housing fully included in our solar programs; to having energy efficiency as part of that, a strong part of that. And to working jointly with our colleagues at the CPUC to develop it in a way that is as smooth as possible for the affordable housing community.

COMMISSIONER GRUENEICH: Well, I'll just close by again thanking everybody. And part of what I really enjoy about public workshops dialogue is that you learn the unexpected things.

And I've mentioned a couple times that we hosted this low-income, energy efficiency symposium last week. And I felt that I had come out hearing just a very comprehensive view from national experts around the country, as well as people within California, about what needs to be

done to address low-income energy efficiency.

And I was thinking, well, today I'm putting on my solar hat; I'm going to learn all about solar. And lo and behold, I learned probably just as much in thinking about the energy efficiency component as I did with the solar component.

And I guess the daunting task, as we've all said, is this is really complex. And all of us sitting up here today, and I know certainly Commissioner Pfannenstiel, as well, we absolutely believe in the loading order, which says we want to have the energy efficiency portion of this thought through and addressed in a sensible fashion, as well as the solar part.

And in some ways, it would be easier just to say forget about that, it's already going to be complicated enough just to figure out the solar part. But I don't think we're going to do it, we're all challenged by new tasks.

But this is something where we obviously have got to have everybody giving us some thoughts. And we may end up, we've talked about trying a couple of different approaches because it's not really clear what's going to make the

most sense.

So I just want to thank everybody very much for coming. And I guess if you'll abide with us, just be prepared to work with us over the next months and probably years on this issue.

Thank you.

MR. TUTT: And thank you. One last thing. Comments here, filed at the Energy Commission by next Tuesday, and we will pass them on to the CPUC, so you don't have to file them in two places.

Thank you.

(Whereupon, at 3:48 p.m., the Joint Workshop was adjourned.)

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CERTIFICATE OF REPORTER

I, PETER PETTY, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission and California Public Utilities Commission Joint Workshop; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said workshop, nor in any way interested in outcome of said workshop.

IN WITNESS WHEREOF, I have hereunto set my hand this 2nd day of July, 2006.